APPENDIX B

PLANTS OF THE BLACK HILLS AND WIND CAVE NATIONAL PARK: Their Cultural Uses & Meanings

The plants described in this appendix are organized into four major groups: 1) *Non-Vascular Plants: Fungi, Lichens, and Moss;* 2) *Vascular Plants: Flowering Forbs;* 3) *Vascular Plants: Grasses, Sedges, Rushes, and Horsetails;* and 4) *Woody Plants*. Again, all references to plant species at Wind Cave National Park come from the park's websites (Pisarowicz 2001f, 2001g, 2001h, 2001i, 2001j, and 2001k, 2002a, 2002b, 2002c).

This listing is not inclusive of the plants located in the Black Hills, nor does it cover all the names and uses of plants among the tribes known to have occupied the area in historic times. Some of the scientific and common plant names listed by ethnographers do not correspond with new scientific nomenclatures. An asterisk is placed next to all plant names that have not been matched with listings on the USDA's plant database (http://plants.usda.Gov/tools.html).

I. NON-VASCULAR PLANTS: FUNGI, LICHENS, & MOSS

A wide variety of non-vascular plants were used by the tribal nations of the northern Plains for food and other purposes, although many of them have not been identified and correlated with indigenous nomenclatures. These are found throughout the Black Hills growing on trees, rocks, and soils common to the region.

Names:

Cheyenne (Grinnell 1972:2:169; Hart 1981:2, 3, 4)
e ov' a a oh' a [yellow heat]
*Letharia vulpine**
alternate: *me?hasetoeve* [no translation given]
hehpano [no translation given]
Lycoperdon [puffball]
me e mi'a tun [incense smoke fragrance]
*Polytrichum juniperinum**

Kiowa [Vestal and Schultes 1939:12]
ai-pee-o-pa [puffball]
Lycoperdon [puffball]

Lakota (Gilmore 1919:63; Buechel 1970:121, 183, 439, 442, 593, 658, 659; Rogers 1980:62; Lewis, T. 1990:134)
can nakpa [tree ears]
Polystictus versicolor [bracket fungi]
can wiziye [wood to dye something yellow]
Parmelia borrei [beard lichen]
hoksi' cekpa [boy's navel]
Lycoperdon [puffball]
peji hinkpila [short hair grass]
[applied to an unidentified moss]
peta yuhala [one with a small fire]
[will o'whisp or touchwood]
zitkala ipatapi [bird ornament]
[refers to a lichen or moss growing on rocks]
alternates: *zitkala wipatapi* [bird quillwork]
zitkala waksupi [bird's beadwork]
inyan waksupi [rock beadwork]

Plains Apache (Jordan 1965:136)
nobi.zi.s [earth's wart]
Lycoperdon [puffball]
alternate: *daze abi ∂ e.ci* [coyote's penis]

Ponca [Gilmore 1919:63]
mikai hthi [star sore]
Lycoperdon [puffball]

Habitat: There are numerous species of lichen at Wind Cave National Park (Pisarowicz 2002a). Since many of the tribal

names that apply to lichen are not linked to specific species, it is difficult to determine whether any of these match some of the varieties found at the park.

Uses: A wide variety of non-vascular plants were used for food and medicine but also in art and manufacturing.

[food] The tribal nations who lived in the Black Hills region ate certain fungi. Melvin Gilmore (1919:61-62) observed Lakota women gathering elm cap [*Pleurotus ulmarius*] for food from decayed areas of box elder and elm trees. Luther Standing Bear (1978:58) and Christina Little Horse (in Lewis 1980:253) describe this as well. The Lakotas also gathered bracket fungi for food from young ash trees (Standing Bear 1978:62). The Poncas boiled and ate puffballs, and the Cheyennes consumed another large fungus of unknown origin that grows on cottonwood trees (Grinnell 1972:2:168). Many northern plains tribes found puffballs [*Lycoperdon*] to be a palatable food (Gilmore 1919:63; Vestal and Schultes 1939: 12).

[medicinal] The Cheyennes, Lakotas, Poncas, Kiowas, and Plains Apaches moistened the dry spores of puffballs [*Lycoperdon*] to use as a styptic for sores, scratches, and an infant's umbilicus (Gilmore 1919:63; Vestal and Schultes 1939:12; Jordan 1965:1135-136; Hart 1981:3; Lewis, T. 1990:135; St. Pierre and Long Soldier 1995:84; Red Shirt 2002: 114). Lakotas used *Parmeliaceae* in their treatments for rheumatism (Densmore 1918:271). The Kiowas applied a variety of lichens, which were dried and powdered, to treat sore and abscessed gums (Vestal and Schultes 1939: 12). According to the Cheyennes who Grinnell (1972:2:169) interviewed, *Polytrichum juniperinum*, which grows on diseased pine trees, was burned with sweet grass to purify and make other medicines stronger (Hart 1981:3).

[symbolic & ceremonial] The Kiowas also mixed lichens in their tobacco mixtures for ceremonial smoking (Vestal and Schultes 1939:12). Lame Deer (in Fire and Erdoes 1972:177), a Lakota medicine man, reported that stones with lichens are preferred for burning in sweatlodges because they don't crack or burst. In Lakota origin stories, *Wohpe* is the one who creates puffballs (Walker 1983:365-366).

[art & manufacture] Some lichens were also used to make yellow dyes for porcupine quills (Gilmore 1919:63; Buechel 1970:5, 93).

II. VASCULAR PLANTS: FLOWERING FORBS

There are more than 300 different species of flowering forbs described in Larson and Johnson's book (1999) on the plants of the Black Hills. Of these, nearly half are documented in ethnographies and ethnobotanies for the tribal nations who lived in the region during historic times. And more than three-quarters of the plants reported at Wind Cave National Park have names and/or traditional uses among the tribes who lived historically in the region. A few other species, which are not reported in Larson and Johnson's work (1999), are included here as well, not only because they were used by local tribal nations but also because they are commonly found in the grassland or sagebrush steppe habitats surrounding the Hills.

Agavaceae
Agave Family

Yucca glauca
[soapweed]

Also known as soapweed, *Yucca glauca* [yucca] is the only member of the agave family reported in the Black Hills. Widespread in the high plains area of the United States, it is a plant for which resi-

dent American Indian populations had many uses. The plant's capacity to produce high levels of saponins, steroid derivatives, may very well account for its popularity in native and Euroamerican hygienic and medicinal practices (Kindscher 1987:224-227, 1992: 219-223).

Names:

Cheyenne (Hart 1981:12; Whiteman in Schwartz 1988:53)
hestahpano?e [no translation provided]
alternate: *hestapano* [soap weed]

Comanche [Carlson and Jones 1939:524)
mu:mutsi [no translation given]

Kiowa (Vestal and Schultes (193917)
kaw-tzee-a-tzo-tee-a [no translations given]
alternates: *ol-po-on-a*
kee-aw-gee-tzot-ha'-a'

Lakota (Buechel 1970:190; Rogers 1980:30; Walker 1980:93)
hupe'stola [sharp pointed stem]
alternates: *icahpahu pejuta* [medicine that grows in a bunch or cluster]
pesto'stola [sharp pointed stem]
tazi-yazan pejuta [stomachache medicine]

Plains Apache (Jordan 1965:54)
da o ig o a [appears whitish]

Ponca (Gilmore 1919:71)
duwaduwa-hi [no translation provided]

Habitat: Soapweed is widely found throughout the high plains in sandy blowouts and hillsides from Montana to Texas, and it is a species common to the grassland foothills of the Black Hills including those located at Wind Cave National Park (Kindscher 1987:225; Larson and Johnson 1999:44; Pisarowicz 2001h:1).

Uses: This is one of the most versatile plants in the northern Plains because its flowers, stalks, fruits, leaves, and roots wereused for food, medicinal, hygienic, and/or manufacturing purposes (Kindscher 1987: 225-226).

[food] In the northern areas of the Plains, this plant is rarely listed as an important source of food, although the Kiowas and Plains Apaches who once resided in the region of the Black Hills ate the flower stalks and called them "Indian cabbage" in English (Vestal and Schultz 1939:17; Jordan 1965:54; Kindscher 1987:226). The Cheyennes considered the seedpods edible (Whiteman in Schwartz 1988:53). The native peoples of the Southwest commonly ate the fruits and flower pistils (Larson and Johnson 1999:44), but there is no published evidence for this practice among the tribes of the Black Hills.

[medicinal] According to Reverend Eugene Buechel (1970:190), the Lakotas had two major medicinal uses for this plant. In one, the plant was mixed in tepid water and used as a tea to treat stomachaches, and in the other, it was combined with prickly pear cactus roots in a medicinal solution to aid birthing. He also points out, however, that it was known to have dangerous side effects when used obstetrically because it could cause a fetus to be aborted. As the Lakota medicine man, Archie Fire a.k.a. Lame Deer (in Fire and Erdoes 1972:172) said, "This medicine is *lila wakan* -- very sacred, working two ways." Another Lakota, George Sword (in Walker 1980:93), reported that powders were made from the plant and mixed with water to treat swellings and stomachaches. The Cheyennes pulverized the root to make a powder to apply to sores, rashes, and other skin ailments (Hart 1981:12). Melvin Gilmore (1919:71) noted that the Poncas and Omahas burned the root as a medicinal remedy for unidentified medical conditions. The Plains Apaches used strips of yucca leaves to wrap and tie poultices around an injury (Jordan 1965:54). 1981:12). European Americans of the Plains and Intermountain West were known to use this plant in making remedies for the treatment of arthritis, and it is still popular for this purpose among herbalists today (Kindscher 1992:221-22; Tilford 1997:172).

[cosmetic & hygienic] Among the Lakotas, the sudsy lather produced from the roots was used to make soap for cleaning hair, and it served as a tonic to treat lice infestation. Along with the Cheyennes, the Lakotas believed the plant was able to promote hair growth (Gilmore 1913b:358; Buechel 1970: 190; Rogers 1980:30; Fire and Erdoes 1972:172; Whiteman in Schwartz 1988:53; Suka Sni Win n.d.:15). Luther Standing Bear (1978:65) wrote:

> The pride of both Lakota men and women was a splendid head of hair, and especial attention was given to its care as a mark of good breeding. The women were especially proud of long hair and brushed and smoothed their long braids to keep them from breaking. Frequent washings in hupestola kept the hair glossy. Every morning a married woman had her hair brushed and her face painted for the day by her husband. This was a mark of respect that every Lakota brave paid his spouse.

Among the Cheyennes, Comanches, Kiowas, and Plains Apaches, the root was used to clean hair as well and to treat dandruff and baldness (Carlson and Jones 1939:524; Vestal and Schultes 1939:19; Jordan 1965: 150; Hart 1981:12; Kindscher 1987:226). The Plains Apaches and Arapahos also used it to wash clothes and blankets (Nickerson 1966:47; Jordan 1965:151).

[veterinary] The Lakotas believed that yucca had "*wakan*" or sacred qualities when smoke from its burning roots were used to control horses (Buechel 1970). As Lame Deer (in Fire and Erdoes 1972:172) put it, " Let these animals smell its smoke and they slow up, quiet down enough for you to catch them."

[art & manufacture] The Lakotas bundled the sharp pointed leaves to use as fire drills. They employed the roots in solutions to tan hides (Gilmore 1913b:358; Kindscher 1992: 226). The Lakotas and the Plains Apaches used the sharp point as a needle and made thread from the leaves (Gilmore 1919:71; Rogers 1980:28; Jordan 1965:90). The Cheyennes used yucca leaves in their basketry for a game called *ko koe has in e ya* (Grinnell 1972:1:246, 332), and the Plains Apaches made them into a puzzle game (Jordan 1965:89-90).

[fuel] The Cheyennes made punks out of dry, rotten yucca roots to transport fire (Grinnell 1972:2:543), and the Lakotas used yucca as a fire-starter and as a means of transporting it (Mallery 1886:291; Black Elk in DeMallie 1984:311).

[symbolic & ceremonial] The Lakota spiritual leader Nicholas Black Elk (in DeMallie 1984:311) describes how the Lakotas attributed to the origins of fire to the yucca plant.

Alismataceae
Water Plantain Family

Two plants in the Water Plantain Family, *Sagittaria cuneata* [arumleaf arrowhead], described below, and *Alisma plantago* [water plantain], which is found largely in regions east of the Black Hills, are named in the botanical nomenclatures of the tribal nations who resided in this area. In Lakota, water plantain is called *wakinyanla pahli' hu* [small thunder stick in the ground stem] (Buechel 1970:531; Rogers 1980:25). It is one of the plants mentioned in the Lakota creation story (Walker 1983:234).

Sagittaria cuneata or latifolia
[arumleaf arrowhead]

Also known as Duck potato, this is the most common *sagittaria* species found in the Black Hills (Larson and Johnson 1999:46).

Names:

Cheyenne (Grinnell 1972:2:170; Hart 1981:7)
ho hast soh' [shining stalk]
alternate:*heshexova?tovotsr* [no translation given]

Lakota (Buechel 1970:176, 447; Rogers 1980:26)
hinhan tahanpe [refers to the shape of its leaves
alternate: *pstio'la hu* [bead plant]

Ponca (Gilmore 1919:65)
sin [no translation given]

Habitat: In the Black Hills, this plant is generally located at the margins of low elevation ponds and streams (Larson and Johnson 1999:46).

Uses: The tubers were a valued source of food especially for tribal nations located in the prairies east of the Black Hills.

[food] The Cheyennes ate the stalk below the blossom raw (Grinnell 1972:2:170), and the Arapahos consumed them fresh as well (Nickerson 1966:46). Lakota women and men gathered arrowhead tubers from local waters (Hassrick 1964:179; Standing Bear 1978:58). They were prepared for consumption through boiling or roasting (Buechel 1970; 176; Gilmore 1913a:358; Gilmore 1919:65). Christina Little Horse (in Lewis, L. 1980:251) recollected her grandmother gathering these and said:

> When she would go out to pick the berries and wild food she had been used to eating, she would take me along. Usually the first place we'd go would be the creek. There was a plant growing there she called "spetola." That word meant beads. She'd take the plant out of the muddy, slushy water where the leaves would be floating on top of the water. She'd reach into the water with her hands and dig around and she would come up with a white, cordlike root with little bumps on it from about the size of a walnut down to the size of small beans. The root and the bumps together looked just like a string of beads. She would take all those beadlike things off the cordlike root and wash them in water. Then she'd boil them and they tasted just like mashed potatoes. She said they were Indian beans.

[medicinal] The Lakotas were known to have used the tubers for unspecified medicinal purposes (Gilmore 1919:65; Buechel 1970:176), and the Cheyennes combined the leaves in an herbal mixture whose applications are not reported (Hart 1981:7).

[veterinary] The Cheyennes also relied on the arrowhead plant in a medicine for horses with trouble urinating (Hart 1981).

Amarantheae
Amaranth Family

Two species from this family are reported in Wind Cave National Park, *Amaranthea retroflexus* [rough pigweed or redroot amaranth] and *A. albus* [prostrate pigweed] (Pisarowicz 2001k:4); both grow in ravine environments.

Names:

Lakota (Buechel 1970:520, 521, 652; Rogers 1980: 32)
wahpe'maka ayublaya [spread on out on ground]
A. albus
yuspu'la ota [pulling off many things with hands]
A. retroflexus
wahpe yatapi iyececa [like *whape yatapi*]
A. arenicola [sandhill amaranth]
canhlogan istawiyaowicahpaya [something that bites the eyes]
Froelichia floridana [snakecotton]

Uses: Only the Kiowas and Plains Apaches were reported to use amaranth. The Lakotas probably had some uses for species in this family too, given the fact that they identified and differentiated them in their plant nomenclature. However, these have not been described in the published literature.

[Food] The Kiowas and Plains Apaches relied on prostrate pigweed [*A.graecizans*] and other amaranth species as a source of greens, which they often cooked in soups with meats (Vestal and Schultes 1939:26).

Apiaceae
Carrot Family

The carrot family contains species that have diametrically opposing affects on humans. Both the poisonous and the beneficial are found in the Black Hills. Some such as water hemlock and poison hemlock are deadly but remarkably similar in appearance to plants with potential medicinal and nutritional value. Although most tribes relied on various species within this family, they appear to have played a much more central role as food staples for populations, such as the Comanches, Shoshones, and Utes, who were known historically to reside in regions on the southwestern edge of the Black Hills. Other species with important food and medicinal uses, but not reported in the Hills, include *Ligusticum porteri* [Porter's Lovage a.k.a. bear medicine], a high elevation plant found over much of the Rocky Mountain West (Albers and Lowry 1995:55).

Cicuta
[water hemlock]

The Lakotas named this plant *yajopi hu cik' ala* [small flute stem]. In spite of the fact that this is a highly poisonous plant, it was used to treat stomach ailments (Buechel 1970:622; Rogers 1980:33). The Lakota name for it has nothing to do with making a musical sound, but rather, according to Dilwyn Rogers (1980:33), it was similar in appearance to a parsnip that was relied upon for this purpose. Water hemlock is widely found in the Black Hills in moist habitats from low to mid elevations (Larson and Johnson 1999:46).

Conium maculatum
[poison hemlock]

Abundant in many locations throughout the Hills and found at Wind Cave National Park (Larson and Johnson 1999:48; Pisarowicz 2001k:3), poison hemlock was called *yajopi hu* [flute stem] in Lakota (Buechel 1970: 622; Rogers 1980:33). Its stem was not used to make a musical instrument, however (see above).

Daucus carota
[Queen Anne's lace]

This plant of the northern and central Black Hills (Larson and Johnson 1999:48) has no documented ethnobotanical uses for either the Plains Indians or European Americans who lived in the region. It grows at Wind Cave National Park.

Heracleum maximum
[cowparsnip]

Cowparsnip is one of a number of plants that are not readily found in the prairie regions east of the Black Hills, and as a result, the Hills would have been a good place for local tribal nations to find it.

Names:

Arapaho (Nickerson 1966:49)
nee-a-tat [no translation given]

Cheyenne (Hart 1981:40)
hetahpenon?estse [his flute plant]

Lakota (Buechel 1970:622; Rogers 1980:33)
yajopi hu [flute stem]

Ponca (Gilmore 1919:107)
zhaba-makan [beaver medicine]

Habitat: Cowparsnip is occasionally found in moist habitats along streams or in woods and thickets at low to mid elevations in the Black Hills (Larson and Johnson 1999:50). It is located at Wind Cave National Park (Pisarowicz 2001j:2).

Uses: Most of the tribal nations in the Black Hills region used cowparsnip for medicinal purposes (Kindscher 1992:254-255).

[food] This plant's leaves and stems are edible (Tilford 1997:42; Larson and Johnson

1999:50), but only the Shoshones and Arapahos are reported to have taken them as a source of food (Nickerson 1966:49).

[medicinal] The Poncas boiled the root for intestinal pain (Gilmore 1919:107), and the Lakotas also used the root in decoctions to treat stomach ailments (Buechel 1970:622). The Shoshones and Arapahos considered this one of their main plants for making medicines, and they used it in the treatment of colds and flu. They also administered it as a medicinal wash and applied the pounded root in massage therapies (Nickerson 1966:49). European American settlers relied on it for healing remedies as well (Kindscher 1992:255; Tilford 1997:42).

[art & manufacture] The Cheyennes made courting whistles from the hollow stems of the cowparsnip (Hart 1981:40), while the Lakotas made whistles for children (Buechel 1970:622).

[symbolic & ceremonial] The Poncas placed it in the hole where their ceremonial pole was planted (Gilmore 1919:107), and the Arapahos combined the dried root with Bull Durham for use in social smoking (Nickerson 1966:49).

Ligusticum Porteri
[Osha or Porter's Lovage or licorice-root]

Also known as Porter's Lovage, the root of this plant is a popular medicine, known among many American Indian tribal nations as "bear's root." Although neither this plant nor the closely related species known as *Angelica* are reported in the Black Hills, it is mentioned here because it represents an important medicinal and ceremonial plant for many of the tribal nations who live in the Black Hills region. It has a spicy celery like odor and bears a strong resemblance to the poisonous water hemlock, but osha usually grows at elevations (above 5000 feet), higher than the poisonous hemlock (Tilford 1997:178, 204).

Names:

Cheyenne (Grinnell 1972:2:182)
nahko hes tam oka [bear's food]

Lakota (Lewis, T. 1990:47)
canli icahiye [tobacco leaf]

Uses: This has been a very important ceremonial and medicinal plant for European Americans and American Indian populations in the region. Today, it is widely traded among tribal nations in the northern Plains, although interestingly the exact botanical identity of the plant as used among the Lakotas, the Cheyennes, and the Utes has only been confirmed in published sources in recent years (Lewis, T. 1990:47; Black Elk and Lyon 1990:191).

[medicinal] The Cheyennes brew a tea from the root to treat diarrhea (Grinnell 1972: 2:102). The Lakotas use it to treat bronchitis and other respiratory ailments, and they apply it as a salve to heal facial sores (Lewis, T. 1990:134). The Blackfeet and tribal nations in the Northwest employ it for respiratory distress, fevers, and stomachaches. European American herbalists rely on osha for a variety of respiratory complaints (Tilford 1997:204), and they prescribe angelica, as do Chinese herbalists, to relieve female reproductive ailments (Tilford 1997: 198).

[cosmetic & hygienic] The Lakotas believe that the smell of the root prevents snakes from entering a house (Lewis, T. 1990:134).

[symbolic & ceremonial] Today's Lakotas add shavings from the root to their tobacco mixtures (Lewis, T. 1990:134).

Lomatium foeniculaceum
[desert biscuitroot]

Also known as Prairie parsley or Wild parsley, this and the closely related *L. orientale* [Northern Idaho biscuitroot], and *L. dissectum* [fernleaf biscuitroot] were important food and medicinal plants for tribal

nations in the northern Plains (Kindscher 1987:147-48; 1992:260-261). Larson and Johnson (1999) list only the desert biscuit root in their ethnobotanical survey of the Black Hills. Some of the other Lomatium species may exist in the region but are infrequent in their occurrence.

Names:

Cheyenne (Grinnell 1972:2:182; Hart 1981:40)
motsins'tahn [no translation given]
L. dissectum
alternates: *motsenstoste*
nahko'hes tam oka [bear food]

Lakota (Buechel 1970:460; Rogers 1980:33)
sahi'yela tatin'psinla (Cheyenne turnip)
L. orientale
sahi'yela tatin'psinla huzizi [Cheyenne turnip with yellow stem]
*L. nuttali**
alternate: *wahcazi iyawicaskapa* [yellow flower that sticks to a person]

Habitat: Often found in heavy clay soils on the dry plains and foothills, the desert biscuitroot is fairly common throughout the Black Hills (Larson and Johnson 1999:50).

Uses: The various species of *Lomatium* had important culinary and medicinal uses for the tribal nations of the region.

[food] The Lakotas gathered wild parsley, *L. orientale* for food in the spring (Bordeaux 1929:129; Hassrick 1964:179-180; Rogers 1980:33).

[medicinal] Shoshone and Bannock populations considered desert biscuitroot "the Big Medicine," and used it for many different medicinal treatments (Kindscher 1992:260). The Cheyennes pulverized the root of *L.dissectum* and brewed it in a tea for chest pains and other internal ailments, and they also made an infusion from the root that was applied externally to reduce swellings. The powdered leaves and roots of *L. orientale* were made into a tea used in the treatment of bowel pain and diarrhea (Grinnell 1972:2:181).

Osmorhiza spp. [sweetcicely or sweetroot]

Several varieties of *Osmorhiza*, including *O. depauperata* [bluntseed sweet root]* and *O. berteroi* [sweetcicely], were used by many of the tribal nations who lived in the Black Hills region.

Names:

Cheyenne (Grinnell 1972:2:181; Hart 1981:40).
ma ta mhao e (spiny infusion by heat)
alternate: *mahtamahaa?ehe(o?)* [old lady]

Lakota (Gilmore 1919:107)
cha-pezhuta [wood root]

Ponca (Gilmore 1919:107)
shanga-makan [horse medicine]

Habitat: *Osmorhiza* species are restricted to the moist environments of the low to mid elevation regions of the central and northern Black Hills, where their appearance is occasional (Rogers & Johnson 1999:52).

Uses: Sweetcicely appears to have been used primarily for medicinal purposes among the tribal nations of the region.

[medicinal] The Cheyennes pulverized the leaves, stems, and roots and combined them in an infusion to treat stomach bloating and other abdominal complaints. An infusion was also made from the roots to treat kidney disorders. In addition, the Cheyennes chewed the roots and brewed a tea from the leaves to treat colds (Grinnell 1972:2:181-82; Hart 1981:40). The Poncas made a poultice out of the roots to doctor boils, and their Omaha cousins used the roots in healing wounds (Gilmore 1919:107; (Fletcher & La Flesche 1972:2:487). Although this plant is becoming popular among modern herbalists, there is no evidence it was widely used by European American settlers for medicinal purposes (Tilford 1997:142).

[veterinary] The Poncas report that horses were especially fond of the roots, and as a

result, they were used to catch them (Gilmore 1919107).

Peridendra gairdneri [yampa]

Also known as wild carrot, this edible species is widely distributed in the grass meadows of mountain ranges throughout the Intermountain West.

Names:

Cheyenne (Grinnell 1972:2:81; Hart 1981:41)
an'o niv i i tis [four grow together]
alternate: *ano-neve-e?tose*

Habitat: Yampa is occasionally found in the northern Black Hills at high elevations in meadows and open deciduous forests (Larson and Johnson 1999:54).

Uses: Yampa was not commonly gathered by tribal nations on the eastern peripheries of the Black Hills, but it was a very important food for many of the Numic speaking populations who once occupied lands on the western side of the Hills (Garner & Hawley 1950:324; Larson and Johnson 1999:54). It was probably significant to the Comanches when they lived near the southwestern edge of the Black Hills. *Yampirika* [eaters of wild carrots] is an old band name for the Comanches and also the Utes. Of the other tribal nations living in the vicinity of the Black Hills, only the Cheyennes have recorded uses for this plant.

[food] Cheyenne women gathered the roots in May and June at the peak of their greatest nutritional value. These were eaten fresh and dried for winter use. When rehydrated, they were prepared as a mush (Grinnell 1972:2181). This was and remains an important food source for the Utes, Shoshones, and Arapahos (Nickerson 1966:49; Smith 1974:271).

[medicinal] This root was also a valued ingredient in various Cheyenne medicinal compounds (Grinnell 1972:2; Hart 1981:41), and it has a wide variety of medicinal uses for European Americans as well (Tilford 1997:166).

Sanicula marilandica [Maryland sanicule]*

Also known as Black snakeroot, it is found frequently in the Black Hills in moist and forested habitats at low to mid elevations. Larson and Johnson (1999:54) report that it has a variety of medicinal uses among American Indians, although none of these were found for any of the tribes who lived in the region historically.

Zizia aptera [heartleaf Alexanders]

Zizia species are largely located in the moist environments of the eastern woodlands and Pacific Coast, and therefore exist as outliers in the more humid central and northern reaches of the Black Hills (Larson and Johnson 1999:56). Again, even though they are used by tribal nations outside the area, there are no reports of their use for tribes living near the Hills (Kindscher 1992:288-289).

Apocynaceae The Dogbane Family

Two species in this family are reported in the region, but only one is documented in ethnobotanical sources.

Apocynum spp. [Indian hemp]

Two species of dogbane are reported in the Black Hills, *Apocynum androsaemifolium* [spreading dogbane] and *A. cannabinum* [Indian hemp] (Larson and Johnson 1999:54-56). Indian hemp is also found at Wind Cave National Park.

Names:

Kiowa (Vestal and Schultes 1939:47)
gho-la [no translation given]

Lakota (Buechel 1970:353; Rogers 1980:34)
nape'oilekiyapi [to burn in the hand]
A. cannabinum
*so called because the wooly seeds burned rapidly in people's hands

Habitat: Spreading dogbane is located throughout the Black Hills at low to mid elevations in dry, rocky meadows, woodlands, and forest openings and edges, while Indian hemp is most commonly found at low elevations in moist habitats (Larson and Johnson 1999:54-56).

Uses: An indigenous name and documented use for this plant has been found only for the Kiowas and Lakotas.

[food] The Kiowas allowed the plant's sap to harden and used it as a chewing gum (Vestal and Schultes 1939:47).

[medicinal] Spreading dogbane is reported as an American Indian medicinal plant for the treatment of venereal diseases and wart removal (Larson and Johnson 1999:54), but there is no confirmation of this use in the ethnobotanical sources for the tribal nations who occupied the Black Hills in historic times. Indian hemp also has medicinal uses in European American folk medicine and for tribal nations outside the region, but again, nothing has been uncovered for native populations historically associated with the Hills (Kindscher 1992:41-45; Tilford 1997: 196).

[art & manufacture] The Lakotas and other tribal nations of the region used the stems for cordage (Nickerson 1966:49; Rogers 1980:4).

Araceae
The Arum Family

No plants in this family are reported for the Black Hills in Larson and Johnson's work (1999). One plant, which is an eastern Woodlands plant and located outside the region, however, deserves mention, and this is *Acorus calamus* [sweet flag]. Known as *sinkpe tawote* [muskrat food] or *hohwa* [refers to the consumption of the plants stalks] in Lakota (Buechel 1970:182, 454; Rogers 1980:26) and *wi ukh is e'evo* [bitter medicine] in Cheyenne (Grinnell 1972:2: 171), it was an important medicine for tribes throughout the region. According to Melvin Gilmore (1919:70), it was considered a "panacea" and used to reduce fevers, toothaches, sore throats, muscle cramping, and anxiety. In more recent times, it is taken by Dakotas and Lakotas to treat diabetes, toothaches, and sore throats (Albers 1966-1976; Lewis, T. 1990:135; Kindscher 1992:25). Even though it does not typically grow on the High Plains, the tribal nations who live in this region still secure the plant's roots through long-distance trade connections with Sisseton Dakota who occupy areas in Minnesota and South Dakota where this plant remains plentiful (Albers 1966-1976; Grinnell 1972:2:171).

Araliaceae
The Ginseng Family

Aralia nudicaulis [wild sarsaparilla] is the only member of the Ginsing family reported in Larson and Johnson's botanical inventory of plants in the Black Hills. Common at low to mid elevations in the central and northern Black Hills, it is found in the understory of coniferous and deciduous forests (Larson and Johnson 1999:58). This is another plant that has important medicinal uses among tribal nations in the eastern regions of the United States, but one that has not been documented for the tribes who occupied the Hills in historic times. *Panax quinquefolius* [American Ginseng], however, is known to

the Cheyenne as *vanov* [rainbow medicine]; it is considered one of their strongest medicines and commonly used as a stimulant (Whiteman in Schwartz 1988:53). This may be the plant the Lakotas called *ta'to* or *pejuta to*; it was used in treatments for anemia, stomach bloating, and muscle pain (Buechel 1970:484, 824; Sword in Walker 1980: 93).

Asclepiadaceae
The Milkweed Family

Most species in this family, known for their production of a milky sap, have many different documented medicinal uses (Kindscher 1992:54-59). The Lakotas, for example, are reported to have eleven names for seven different species in the milkweed family (Gilmore 1919:109; Rogers 1980:34). *A.speciosa* [showy milkweed], which is found on the eastern margins of the Plains and at Wind Cave National Park, is the most commonly used milkweed in the region. *A. incarnata* [swamp milkweed], *A.pumila* [plains milkweed], *A.verticillata* [whorled milkweed], and *A.virdiflora* [green milkweed] are only documented in sources on the Lakotas.

Names:

Cheyenne (Grinnell 1972:2:183; Hart 1981:14)
ma tan ai mahkst [milky wood pieces] *A. speciosa*
alternates: *matanaa-vo?estse* [milk plant]
matanaa-maxestse [milk wood]

Kiowa (Vestal and Schultes 1939:47)
zaip-ya-daw [no translation provided]
*generic name for *Asclepia* species

Lakota (Gilmore 1913b:363, 1919:57; Buechel 1970:130, 192, 431, 440, 489, 517, 519, 520; Rogers 1980:34)
cesloslo pejuta [diarrhea root] denotes
A. pumila
alternate: *hante'iye'ceca* [like juniper]
pezi swula cikala [small fine herb]
hu' cinska [spoon-shaped stem]
A. viridiflora
pan nunpala [two little workbags of women]
A. speciosa
alternate: *wahcahca* [flower blossom or flowery flower]
pejuta zi [yellow root]
A. tuberosa
tinpsila pejuta [turnip root]
A. stenophylla
wahcha cha [flower blossom]
A. syriaca
wahinheya ipi'ye [medicine to doctor gopher]
A. incarnata
alternate: *wahca'hca hu bloka* [male flower stem]
wahpe tinpsila [turnip leaf]
A. verticillata

Plains Apache (Jordan 1965:104)
'ize.licowe [yellow medicine]
A. tuberosa

Ponca (Gilmore 1919:109)
makan saka [raw medicine]
A. tuberoa
wahtha [no translation given]
A. syriaca
wahtha [no translation given]
A. exaltata

Habitat: *A. incarnata* [swamp milkweed] is common in the Black Hills and found along low elevation streams especially in the southern areas. Also located at low elevations is *A. pumila*, which is associated primarily with the Hogback and Red Valley. *A. speciosa* [showy milkweed] is the species of milkweed most frequently found in the Plains, and in the Black Hills, where it is generally located in meadows and prairies at low elevations. *A. Viridiflora* appears occasionally at low elevations, especially in the Red Valley and at various limestone, grassland, and open forest sites. While *A. verticillata* [whorled milkweed] appears frequently in adjacent grasslands, it is uncommon in the Hills and restricted to the grassland margins (Larson and Johnson 1999:60-64). *A.incarnata*, *A.speciosa*, and *A.verticillata* are reported at Wind Cave National Park (Pisarowicz 2001h:2, 2001j:2).

Uses: Except for *A.speciosa*, which was a food source for many tribal nations in the region, most of the other milkweeds were taken primarily for medicinal purposes.

[food] The flowers of *A.speciosa* were collected by the Lakotas to thicken soups and also as a preserve (Bordeaux 1929:131; Buechel 1970:519). The Crows boiled the

flowers and ate the seeds raw (Kindscher 1987:56), and the Cheyennes boiled them with meat and in soups (Hart 1981:14, 1992: 66). The Cheyennes also ate the inner layer of the stalks when the fruit was still green, and they used the dry milk as a chewing gum (Grinnell 1972:2:183). The Kiowas and Plains Apaches ate the young pods of many different milkweed species, and often referred to them in English as "Indian pickles" (Vestal and Schultes 1939:48; Jordan 1965: 27). Lakotas, Poncas and Pawnees ate the young sprouts of *A.syriaca* (most commonly found in areas east of the Black Hills) in spring and boiled the bud clusters in the summer like cabbage (Gilmore 1913b:363; Gilmore 1919:109-110).

[medicinal] The Lakotas used most milkweeds for medicinal purposes. They prepared a salve from the roots of *A.incarnata* to treat swollen glands, which in Lakota beliefs are caused by encounters with gophers. Lakota children were admonished to keep away from gopher mounds, or they would come down with scrofulous swellings in their neck (Buechel 1970:517; Rogers 1980:27, 34). Like cedar, *A.pumila* was brewed in a tea primarily for the treatment of childhood diarrhea (Buechel 1970:130, 192, 440), while its close relative, *A.verticillata* was prepared to promote milk production in nursing women (Buechel 1970: 520). The roots of *A.viridiflora* and *A. stenophylla* (not reported in the Black Hills) treated a loss of appetite in children (Buechel 1970:489, 520) and childhood diarrhea (Lame Deer in Fire and Erdoes 1972:171-172). *A.speciosa* was taken for unspecified medicinal purposes (Buechel 1970:431).

Other tribal nations also used various milkweed species medicinally. The Cheyennes prepared a medicine from *A.speciosa* for the treatment of various forms of blindness (Hart 1981:15, 1992:66), and the Plains Apaches employed it for relieving stomach complaints, fevers, and snakebites (Jordan 1965:104). The Poncas relied on many different species of milkweed for a wide range of medicinal purposes including pulmonary and intestinal complaints (Gilmore 1919: 109-110). European Americans depended on *A.speciosa* and other western milkweed species to eliminate warts and skin parasites, and the roots of milkweeds were relied on to cure a range of ailments from asthma to kidney stones (Moore 1979:106-107; Tilford 1997:97).

[art & manufacture] The Kiowas may have used the dried pods of *A.speciosa* as spoons (Vestal and Schultes 1939:47), while the Cheyennes once made a fiber from the plant to make threads and bowstrings (Grinnell 1972:2:183; Hart 1981:14).

Asteraceae
The Aster Family

Also known as the Composite family, this is the largest family of flowering plants found in the Black Hills with more than 80 different species described in the Larson and Johnson volume (1999:64).

Achillea millefolium
[common yarrow]

Known by many other names, including wild tansy, sneezewort, bloodwort, and milfoil, this plant is very common throughout the northern plains. It is a plant for which resident American Indian populations and early European American settlers had multiple medicinal uses. The plant contains more than 120 different compounds, many with recognized therapeutic value (Kindscher 1992:17, 20-22).

Names:

Cheyenne (Grinnell 1972:2:189; Hart 1981:17; Whiteman in Schwartz 1988:53)
i ha i se e yo [cough medicine]
alternate: *hehaa-heseeo?otse*
hesta-beseoz [heart medicine]

Lakota (Densmore 1918:254; Buechel 1970:192; Rogers 1980:35)
hante canhlogan [cedar weed]
alternate: *taopi pejuta* [wound medicine]

Habitat: Common yarrow is ubiquitous in the Black Hills and located at all elevations in dry meadows, grasslands, and open forests (Larson and Johnson 1999:68). It is also present at Wind Cave National Park (Pisarowicz 2001h:3). Lame Deer (in Fire and Erdoes 1972:170-171) said that this plant was most frequently found among the prehistoric dinosaur bones located in the Badlands.

Uses: All parts of the plant were employed, but the leaves and tops had the greatest importance (Kindscher 1992:17). Its use is reported for tribal nations throughout the high plains and intermountain deserts, and interestingly, many of its most common applications are similar to those followed by European Americans.

[medicinal] The Cheyennes brewed a tea from the plant to stimulate sweating and alleviate cold symptoms and other respiratory problems, and they also used it to treat heart trouble, chest pains, and nose bleeds (Grinnell 1972:1:89; Hart 1981:17-18; Whiteman in Schwartz 1988:53). The Lakotas are also reported to have made a tea to treat colds and coughs (Buechel 1970: 192), and they applied it as a poultice to treat wounds (Densmore 1918; 254; Erdoes 1988:171-172). The Crows used it to make poultices to heal burns, boils, and open sores (Hart 1992:7). The Shoshones and Arapahos mixed it in poultices for sores, and they made a laxative tea from it (Nickerson 1966:50). It was widely recognized among European Americans and used as a tea or infusion to treat coughs, sore throats, and earaches. It is reputed to have mild laxative properties as well (Kindscher 1992:20-21; Tilford 1997:166; Larson and Johnson 1999: 68).

[art & manufacture] The Shoshones and Arapahos used the leaves in a green dye (Nickerson 1966).

Agoseris glauca **[pale agoseris or false dandelion]**

Commonly found in the low to mid elevation meadows and grasslands of the Black Hills (Larson and Johnson 1999:68), the False dandelion (goat chicory) was called *yapi'zapi iyececa* [like a mouth organ] in Lakota (Buechel 1970:626; Rogers 1980: 35). It grows at Wind Cave National Park (Pisarowicz 2001h:3). Although Larson and Johnson (1999:68) report that American Indians chewed the sap of the plant to clean their teeth, this has not been confirmed in ethnobotantical sources specific to the tribal nations who historically lived around the Black Hills.

Ambrosia **spp. [ragweed]**

Various varieties of ragweed are widespread in the northern plains. Commonly found near disturbed pasture, roadside, and stream bank habitats, it is an important medicinal plant for many tribal nations in the region (Kindscher 1992:33).

Names:

Cheyenne (Grinnell 1972:2:188; Hart 1981:18]
mohk tah' wanotst [black sage]
alternate:*mo?ohtaa-vano?estse*

Comanche (Carlson and Jones 1939:520)
w>anatsu [no translation given]

Kiowa (Vestal and Schultes (1939:55)
ko-'khad-la tzan-go-pan-ya [horse worm plant]
alternate: *a'sahe* [green plant]

Lakota (Gilmore 1913b:369; Buechel 1970:117, 445, 624; Rogers 1980:35)
canhlogan panspanjela (bulky weed)
A. trifida
alternate: *yamnu'mnuga iyececa* [grating with teeth]
canhlogan wastemna [sweet smelling weed]
A. artemisiifolia
alternates: *canhlogan onzipakinte* [rear wipe stem]
poipiye [to doctor swellings]
pejuta pa [bitter medicine]

Plains Apache (Jordan 1965:97)
^o'di.ci.hi [bitter grass]

Habitat: Ragweed is found throughout the Black Hills at low to mid elevations in grassland, open forest, and disturbed sites (Larson and Johnson 1999:70). Western ragweed is reported at Wind Cave National Park.

Uses: The leaves, top, root, and even the entire plant were employed by tribal nations throughout the area for a variety of different medicinal purposes (Kindscher 1992:33).

[medicinal] Many tribes relied on this plant to treat intestinal disorders. The Cheyennes used the stem and leaves to concoct a tea as a remedy for constipation, bowel cramps, and bloody stools (Grinnell 1972:2:188; Hart 1981:18), while the Dakota took the plant's top and leaves to relieve vomiting (Gilmore 1913b:369). The Lakotas made a tea from the leaves of *A.artemisiifolia* for swellings (Buechel 1970:117), and the Cheyennes did so to treat colds (Grinnell 1972:2:188). The Kiowas relied on ragweed leaves to heal sores (Vestal and Schultes 1939:55), and the Plains Apaches also applied them to sores but considered the treatment too strong for persistent use (Jordan 1965:97).

[veterinary] The Kiowas also gave the tea they made for themselves to their horses to doctor skin disease and sores (Vestal and Schultes 1939:55), and the Plains Apaches made a juice specifically to treat screw-worms in horse wounds and also to heal sores on dogs (Jordan 1965:97).

[symbolic & ceremonial] The Kiowas sometimes combined ragweed with various sages for smudges in their sweatlodge (Vestal and Schultes 1939:55).

Anaphalis margaritacea **[pearly everlasting]**

This plant is found occasionally at mid to high elevations in the central and northern regions of the Black Hills, and it also appears at Wind Cave National Park (Larson and Johnson 1999:70; Pisarowicz 2001h:3). The Cheyennes knew this plant as *sihy'a-ino eisse'eo* [strong medicine] or *tsexehaae-no?heseeo?otse* (Grinnell 1972:2:187; Hart 1981:18). Although the plant has known antihistamine properties and was taken by tribal nations in the eastern woodlands and the Pacific Northwest for respiratory disorders, only the Cheyennes are reported to have used it (Tilford 1997:108). The Cheyennes put the plant on the hooves of their horses to make them endure, and its powder was blown between the animals' ears to make them long-winded (Grinnell 1972:2: 187; Hart 1981:18). They also gave this plant as a gift to their spirits. According to George Bird Grinnell (1972:2188), "in one of his little medicine bundles, each man carries some of the dried and powdered flowers of this plant; and formerly, when going into battle, he chewed a little of it and rubbed it over his arms, legs, and body, for the purpose of imparting strength, energy, and dash, and thus protecting him from danger." Women were not allowed to touch men who had this medicine on their body because this would nullify its effects.

Antennaria **spp. [pussytoes]**

Antennaria grow over much of the United States, and several varieties are reported in the Black Hills and at Wind Cave National Park (Pisarowicz 2001h:3). Only the Lakotas have documented uses and names for them, even though they are widely reported to have medicinal applications for tribal nations in other regions (Kindscher 1992: 227-228).

Names:

Lakota (Buechel 1970:117,178, 445, 474; Rogers 1980:35)
canhlogan hu wanjila [weed with one stem]
A. parviflora
alternates: *hitunkalanakpala* [mouse ear]
poipiye [to treat swellings]
tahca nakpala [deer ear]

Habitat: *A.microphylla* is commonly found in a wide variety of Black Hills habitats at mid to high elevations, while *A.neglecta* and *A.parvifolia*, also frequent in occurence, are associated with low to mid elevation environments (Larson and Johnson 1999:72-74).

Uses: Of the three varieties of *Antennaria* found in the Hills, only *A.parviflora* has been identified in the ethnobotanical nomenclatures of the tribal nations who used the area. The Lakotas have four names for *Antenaria*, but only one has been definitively identified with the *A.parviflora* species.

[medicinal] Lakotas relied on *Antennaria* for unspecified medicinal purposes (Buechel 1970:178), although one of its names suggests it was used to treat swellings (Buechel 1970:445).

[symbolic & ceremonial] The Shoshones and Arapahos dried the tiny leaves to put in their tobacco mixtures (Nickerson 1966:50).

Arcticum minus **[burdock]**

This aster species is reported at Wind Cave National Park (Pisarowicz 2001j:1), but nothing has been found on it in the ethnobotanical literature covering the tribal nations who lived in the Black Hills.

Arnica **spp. [arnicas]**

Three varieties of arnica are found occasionally at mid to high elevations in the northern and central regions of the Black Hills. None of the varieties have been associated with names or uses in the ethnographic and ethnobotanical literatures for the tribal nations who lived in the area in historic times. They are used, however, by European American herbalists in muscle liniments to treat sprains and bruises (Tilford 1997:180).

Artemisia **spp. [sages]**

Numerous species, subspecies, and varieties of sage are found in the western United States, and according to Kelly Kindscher (1992:48), all of them probably had some form of medicinal use. The Lakotas alone have names for seven different species of wild sage. Nearly all of the *Artemisia* species, including the woody varieties covered in another section, were used by the tribal nations of the northern and central Plains, although it is sometimes difficult to determine which species are associated with particular applications since generic names are often given in the sources on native nomenclatures.

Names:

Arapaho (Nickerson 1966:50)
na-ko-ha-sait [no translation given]
A. frigida

Cheyenne (Hart 1981:18)
he?e-vano?etse [woman's sage]
A. frigida
hetane-vano?estse [man sage]
A. ludoviciana

Comanche (Carlson & Johnson 1939:520)
pehebiv [no translation given]
A. ludoviciana
pasiwonepehebiv [no translation given]
A. filifolia

Kiowa (Vestal and Schultes 1939:56)
ta-a [no translation provided]
A. ludoviciana

Lakota (Densmore 1918:259; Gilmore 1919:134; Buechel 1970:117, 439, 519; Rogers 1980:35-36).
canhlogan wastemna [sweet smelling weed]
A. campestris & *A. frigida*
mako sice peji hota [gray grass of the badlands]
A. longifolia
nasula jazanpi ipije [no appetite cure]
A. frigida
alternate: *wahcazi suta* [hard yellow flower]
wia ta pezhihuta [woman's medicine]
peji'ho'ta [grey herb]
A. ludovicina
alternate: *peji'ho'ta ape' blaska' ska* [grey herb with flat leaf]

Plains Apache (Jordan 1965:99)
^eldilgð.de [burning stick]
A. ludoviciana

Ponca (Gilmore 1919:134)
pezhe-hota [grey medicine]
A. ludoviciana
pezhe hota zhinga [little grey herb]
A.frigida
thasata-hi [no translation given]
A. dracunculus

Habitat: *Artemisia compestris* [western sagewort] is a very common plant in the central Plains region with many different varieties; members of the subspecies *candata* and *borealis* being the most common in the Black Hills**.** It appears occasionally in dry, sandy, or rocky soils throughout the Black Hills (Larson and Johnson 1999:78-79).

Artemisia dracunculus [green sagewort or tarragon] is found only occasionally at low to mid elevations in dry grassland, sagebrush steppe, and open forest areas over the entire Black Hills (Larson and Johnson 1999:80].

Artemisia frigida [fringed sagewort] is located in many of the same habitats as green sagewort, but it is much more common in the area (Larson and Johnson 1999:80). It appears at Wind Cave National Park (Pisarowicz 2001h:3).

Artemisia ludoviciana (*gnaphalodes*) [cudweed sagewort], also commonly known as white sage, wormwood, or mugwort, is widely distributed in the northern Plains, and in the Black Hills, where it typically appears at low to mid elevations in dry grassland, sagebrush steppe, meadows, and open forests (Larson and Johnson 1999:82). It is also common at Wind Cave National Park (Pisarowicz 2001h:3).

Uses: The Lakotas are the only tribal nation with any recorded use for *A.compestris*, while the Poncas are the only one with any documented applications for *A.dracunculus*. *A.frigida* is described in association with the Cheyennes, the Lakotas, and the Poncas. *A.ludoviciana* has reported applications for nearly all tribes in the northern Plains. Scientific research has demonstrated that Artemisia species contain several components with potent pharmacological effects (Kindscher 1992:47-52).

[medicinal] The Lakotas brewed a tea from the roots of *A.compestris* to treat the inability to urinate, constipation, and difficulty in childbirth (Buechel 1970:177; Lame Deer in Fire and Erdoes 1972:172). The pulverized roots were also used to promote sound sleep, with the suggestion that it could make men sleep soundly so their horses could be stolen (Buechel 1970:118; Lame Deer in Fire and Erdoes 1972:172).

The Poncas used *A.dracunculus* in a smoke treatment for unspecified illnesses (Gilmore 1919:134).

The Lakotas employed *A. frigida* for a variety of medicinal purposes. A smudge made from the dried and powdered root was sprinkled on hot coals and the fumes inhaled to treat headaches (Densmore 1918:259). The Cheyennes and the Lakotas made a decoction with this herb that was taken internally to treat menstrual irregularities (Gilmore 1919:134; 1930:80; Hart 1992: 45). The Cheyennes also wove a braid from it and wore it around the head to treat nosebleeds (Hart 1981:18). The Arapahos and Shoshones depended on this species to stop hemorrhages (Nickerson 1966:50).

The Kiowas had multiple medicinal uses for *A. ludoviciana*, including the treatment of various respiratory and digestive complaints (Vestal and Schultz 1939:56). The Cheyennes crushed the leaves into a snuff as a remedy for sinus problems and headaches (Hart 1981:19; 1992:44-45), and the Omahas had similar applications (Gilmore 1919: 135). The Crows made an astringent tea for the treatment of eczema (Hart 1992:45). This was one of the most important plants in the Plains Apache pharmacopoeia, and it

was believed to be especially potent in curing depression and restoring harmony, in treating arthritis, rheumatism, and in moxa applications for headaches and body pain (Jordan 1965:99-103). Finally, the Arikaras used it in childbirth (Gilmore 1930:73).

Early settlers also collected sage for a variety of medicinal purposes, adapting well-known remedies from Europe to American soil (Kindscher 1992:50-51; Tilford 1997: 208).

[cosmetic & hygienic] The Lakotas pulverized the roots of *A. campestris* for a perfume (Buechel 1970:117), and they mixed *A. frigida* in solutions for bathing (Gilmore 1919:134). Larson and Johnson (1919:80) report that the foliage of *A. frigida* was used as toilet paper and for menstrual pads, but, again, they do not identify the tribal origins of these practices.

The Lakotas took bunches of *A.ludoviciana* to brush and purify the body, especially in preparation for ceremonial functions (Gilmore 1919:135). They also mixed it with water for bathing, something also done by the Omahas (Gilmore 1913b:369; 1919: 134). The Crows made an astringent tea as a deodorant and antiperspirant for feet and underarms (Hart 1992:45), and the Kiowas used this sage as a towel in bathing (Vestal and Schultes 1939:56).

[art & manufacture] The Comanches made mattresses for childbirth from *A. frigida* and cushions for their tipis (Carlson and Jones 1939:520). The Shoshones and Arapahos used the leaves in a green dye (Nickerson 1966:50). The stems of *A.frigida* were woven into mats and fans, but again the tribal origins of these practices remain unidentified and probably do not refer to tribes in the area of the Black Hills (Larson and Johnson 1999:80).

[fuel] The Cheyennes relied on the dried leaves of *A. ludoviciana* as tinder for starting their fires (Hart 1981:19).

[symbolic & ceremonial] The Cheyennes are reported to have used the root of *A. frigida* in the Sun Dance in association with the role of their sacred woman (Hart 1981:18), and the Lakotas employed it extensively in the *Pte San Lowampi*, the White Buffalo Calf ceremony for pubescent women (Lame Deer in Fire and Erdoes 1972:172; Walker 1980:244, 247-248, 250-251). The Arapahos and Shoshones also used *A.frigida* in many of their ceremonies (Nicker-son 1966:50).

According to Melvin Gilmore (1913b:369), the *ton* (immaterial essence) of *artemisia* is repugnant to malevolent forces. Lakota men used A. *ludoviciana* as a smudge to drive away evil influences and also in purifycations to counteract the effects of spiritual transgressions (Gilmore 1919:135; Lame Deer in Fire and Erdoes 1972:170). They employed it extensively in their Sun Dances, not only in the arm and ankle bracelets of the dancers but also to smudge the dance ground and altar (Dorsey, J. 1894: 454; Densmore 1918:93,122; Buechel 1970: 439; Rogers 1980:36; Walker 1980:176-177, 184, 187-188, 190-192). They burned it as incense in the sweatlodge and in the *Hunka* ceremony (Buechel 1970; Walker 1980:94, 197, 214, 224), and they placed it on the altar in Elk Dances (Fletcher 1887a: 284).

Jeffery Hart (1981:18-19; 1992:44-55) writes that *A.ludoviciana* was probably the most important ceremonial plant for the Cheyennes, who used it extensively in the Sun Dance and most other major ceremonies as a ritual border. They also drew on it as an incense to ward off malevolent influences, and their Contrary warriors purified themselves and their horses and lances with it. This was known as their "man sage" (Moore 1974a: 174). The Kiowas and Plains Apaches depended on this variety of sage in their sweatlodges and on other ceremonial occasions (Vestal and Schultes 1939: 56; Jordan 1965: 99). The Arikaras placed a wisp of *A. ludoviciana* in placenta bundles that were hung on fruit trees as an offering to ward off diseases in their children (Gilmore 1930:75).

Balsamorhiza sagittata **[arrowleaf balsamroot]**

This and a related species of balsamroot, *B. hookeri* [Hairy balsamroot], which is not reported for the Black Hills, are important primarily to tribal nations living west of the Black Hills (Larson and Johnson 1999:90). Only the Cheyenne are reported to have had a name for it, *hetone?e-heseeo?otse* [black medicine]. They employed many parts of this plant for medicinal purposes. The roots were used to ease childbirth. A tea made from the leaves, roots, and stems treated stomachaches and colds, and a steaming infusion cured headaches (Grinnell 1972:2: 183; Hart 1981:20). The Cheyenne also tied this plant to the lances of the Bowstring Society members during their ceremonial dances (Grinnell 1972:2:78). The Utes and other tribal nations of the Intermountain west ate the seeds of balsamroot (Albers and Lowry 1995:52), and the Lakotas are reported to have done so as well (Brown 1992:12). A variety of other uses are connected to this plant, but many of them are not confirmed in the ethnobotanical literatures for the tribal nations who lived around the Black Hills (Larson and Johnson 1999:90). Some European American herbalists use the root as a mild expectorant (Tilford 1997:16).

Bidens cernua **[nodding beggartick]**

Beggar's tick is located occasionally, and in certain locations abundantly, at low elevations along stream banks and lakeshores throughout the Black Hills (Larson and Johnson 1999:90). The Lakotas call the *B. glaucescens** variety *minio'huta aglagla wahcazi* [yellow flower growing by water], but no uses for it have been reported (Buechel 1970:336; Rogers 1980:36).

Brickellia (Kuhnia) eupatoriodes **[false boneset]**

The False boneset is located over the entire Black Hills in low to mid elevation meadows, open forests, and grasslands especially along the Hogback and Red Valley (Larson and Johnson 1999:122). It is also present at Wind Cave National Park (Pisarowicz 2001h:3). Only the Lakotas are reported to have a name and possible use for this plant. They called it *poowaste* [good for swelling] or *wakpe 'pa* [bitter leaf] (Buechel 1970:445, 520; Rogers 1980:38). One of these Lakota names implies that it may have been used to treat inflammations.

Carduus nutans **[musk thistle or nodding plumeless thistle]**

The Lakotas call this plant *tokahu* [enemy stem] (Buechel 1970:494; Rogers 1980:36). Luther Standing Bear (1988:101) reported that it was used to make a yellow dye. It is typically found in the northern Black Hills but may appear elsewhere at low to mid elevations along roadsides and in pastures and meadows (Larson and Johnson 1999: 92). It has also been identified at Wind Cave National Park (Pisarowicz 2001k:5).

Centaurea biebersteinii **or** ***maculosa*** **[spotted knapweed]**

Found mostly in the central and northern Black Hills (Larson and Johnson 1999:92) but also reported at Wind Cave National Park (Pisarowicz 2002k:3), the spotted knapweed has no reported uses in the ethnobotanical literature for local tribes.

Heterotheca camporum/ Chrysopsis villosa **[lemonfalse or hairy goldenaster]**

The Hairy Golden aster plant covers the entire Black Hills, from low to high

elevations, where it is found in dry grasslands, meadows, and open forests (Larson and Johnson 1999:94). Only the Cheyennes are known to have named and used it; they called it *mis ka tsi* [chickadee plant]. A drink was made from the plant top and leaves to help a person sleep. It was also employed to exorcise evil influences (Grinnell 1972:2:81; Hart 1981:20).

***Cirsium* spp. [thistles]**

Five different *Cirsium* species are reported in the Black Hills, but only one of these has any name or use reported in ethnobotanical sources for the tribes who once lived in the area. Two of them, *C.arvensis* and *C.undulatum*, are found at Wind Cave National Park (Pisarowicz 2001h:3). Several of the tribal nations who lived in the area have names and/or uses for thistles commonly found in the general area of the Black Hills (Kindscher 1987:85-87, 1992:234-235), but not listed in Larson and Johnson's volume (1999).

Names:

Cheyenne (Hart 1981:20)
heshko-vo?estse [thorny plant]
C. edule

Comanche (Carlson and Jones 1939:521)
tsen [no translation given]
C. undulatum

Kiowa (Vestal and Schultes 1939:85)
sengts-on [thistle]
C. ochrocentrum

Habitat: All of the *Cirsium* are frequent at low to mid elevations in dry habitats over the entire Hills (Larson and Johnson 1999: 96-100).

Uses: Again, many uses are associated with thistles but not for species listed in the Black Hills by Larson and Johnson (1999), although one, *C. undulatum*, which is reported as common in western South Dakota, does have a documented use (Johnson and Larson 1999:108).

[food] Some of the thistle species found in the Black Hills are edible and have a taste that resembles artichokes but others are very bitter (Tilford 1997:144). The Cheyennes ate the inner stem of *C.edule* raw and considered this a prized food (Hart 1981:20), while the Comanches consumed *C. undulatum* and the Kiowas *C. ochrocentrum* (Carlson and Jones 1939:521; Vestal and Schultes 1939:85).

[medicinal] The Comanches used *C. undulatum* to treat gonorrhea (Carlson and Jones 1931:521), while the Kiowas made a tea from the blossoms of *C. ochrocentrum* to treat burns and wounds (Vestal& Schultes 1939:85).

[symbolic & ceremonial] *C.edule* was served as food in the Cheyenne Sun Dance (Hart 1981:20).

***Conyza Canadensis* [Canadian horseweed]**

This tall annual herb with abundant leaves is ubiquitous in North America (Kindscher 1992:236) and very common in the Black Hills (Larson and Johnson 1999:100), but only the Lakota name and use for it have been reported in the ethnobotanical literatures for the tribal nations of this region. Another related species, *C. ramosessma* [spreading fleabane], is reported at Wind Cave National Park] (Pisarowicz 2001h:3). *Canhlogan wastemna iyececa* [like a sweet-smelling weed] is the name for it in the Lakota language (Buechel 1970:118; Rogers 1980:37). The roots, stalk, leaves, and flowers were prepared for a variety of medicinal remedies by tribal nations in various regions of North America (Kindscher 1992:236-237). Lakota people brewed the roots and lower stalks in a tea to treat diarrhea and bowel cramping in children (Densmore 1918:266-267). European settlers used it as a remedy for these

and other conditions, including a treatment for bronchitis and a stimulant to accelerate contractions in childbirth (Kindscher 1992: 237; Larson and Johnson 1999:100).

Coreopsis tinctoria **[plains coreopsis or golden tickseed]**

Also called golden tickseed, this is another common roadside plant in the plains region that contains many medicinally therapeutic properties (Kindscher 1999:238). It is not listed in Larson and Johnson (1999), even though it is very common in regions surrounding the Black Hills (Larson and Johnson 1999b:112).

Names:

Lakota (Buechel 1970:117; Rogers 1980:37; Lewis, T. 1990:134)
canhlogan wakaljapi [boiling weed]
alternate: *lak'olwak'alyapi* [Lakota boiled drink]

Kiowa (Vestal and Schultes 1939:59)
tza-agudl [no translation given]

Habitat: If this plant was present in the Black Hills, it would likely be located in low elevation roadside ditches with sandy soils.

Uses: The plant tops and flowers are used for culinary and medicinal purposes.

[food] The Lakotas prepared a culinary tea from the plant (Buechel 1970:117) as did the Kiowas (Vestal and Schultes 1939:59).

[medicinal] The Lakotas made another tea from the plant that is reported to have blood-strengthening properties. It was also used in treatments for diarrhea, gallbladder, and kidney ailments (Lewis, T. 1990:134). It is known as a remedy in European American folk medicine as well (Kindscher 1992:238).

Dyssodia papposa **[fetid marigold]**

Fetid Marigold is eaten by prairie dogs and commonly found near their towns (Gilmore 1919:133), and thus, its Lakota and Dakota name *Pispiza tawote* or prairie dog food.

Names:

Lakota (Buechel 1970:444; Rogers 1980:37)
pispiza tawote [Prairie dog food]

Ponca (Gilmore 1919:132)
pezhe piazhe [Bad smelling weed]

Habitat: This plant is frequent at low elevations over the entire Black Hills, but it is particularly common in the dry grassland and open forest habitats in the southern regions (Larson and Johnson 1999:102). It is found at Wind Cave National Park (Pisarowicz 2001h:3).

Uses: This plant had important medicinal applications for humans and animals.

[medicinal] The Lakotas and the Poncas powdered and administered the plant for respiratory ailments and inhaled it for headaches (Gilmore 1919:132; Buechel 1970: 444; Lame Deer in Fire and Erdoes 1972: 171). The Plains Apaches probably used the crumbled flowers of this flower as an inhalant too (Jordan 1965:135). The Lakotas mixed it with curly gumweed to stop the spitting of blood (Rogers 1980:37). European Americans were also known to use the plant for different medicinal purposes, from treating diarrhea to the relief of stomachaches and vomiting (Kindscher 1992:241).

[veterinary] This was one of the plants that the Lakotas used to treat coughs in their horses (Gilmore 1913b:369, 1919:132).

Echinacea angustifolia **[purple coneflower]**

This is probably the region's most well known herbal plant. Today, it is sold commercially as a popular antidote and remedy for colds. Recent scientific research has documented many of its medicinally active components. It also stands as one of the most significant herbal plants in the pharma-

copeias of tribal nations who lived in the Plains (Kindscher 1992:84-93).

Names:

Cheyenne (Grinnell 1972:2:188; Hart 1981:20; Whiteman in Schwartz 1988:53)
mohk ta' wi se' e yo [black root]
alternates: *mo?ohta-heseeo?otse*
moxta-vesseoz [black peppermint]

Comanche (Carlson and Jones 1939:521)
dukunenatsu [no translation given]

Kiowa (Vestal and Schultes1939:57)
dain-pai-a [no translation given]
alternative: *awdl-son-a*

Lakota (Buechel 1970:200, 397; Rogers 1980:37; Lewis, T. 1990:135)
icahpe hu [a thing used to knock something down *a.k.a.* whip stem]-
*Applied to plants growing in the hills.
on'glakcapi [hair comb]
*Applied plants found at lower elevations.

Plains Apache (Jordan 1965:110)
∂o.hicise'ize [tooth gum medicine]

Ponca (Gilmore 1919: 131)
mika-hi [comb plant]
alternate: *inshtogahte-hi* [plant to wash eyes]

Habitat: This is a very common plant in dry upland prairies of the high Plains. It is also found throughout the Black Hills in the mixed grass prairie, sagebrush steppe, and open pine forests (Larson and Johnson 1999:102). It grows at Wind Cave National Park (Pisarowicz 2001h:3).

Uses: The root is the most commonly used, but other parts of the plant may be employed for medicinal purposes as well (Kindscher 1992:86).

[medicinal] The Lakotas, Cheyennes, Comanches, Kiowas, and Plains Apaches chewed the roots to treat colds, toothaches, sore throats, and gums (Densmore 1918:389; Carlson and Jones 1939:521; Vestal and Schultes 1939:58; Grinnell 1972:2:188; Jordan 1965:110; Buechel 1970:397; Hart 1981:21; Lewis, T. 1990:135; Whiteman in Schwartz 1988:53). The Lakotas burned the plant's roots in a smoke treatment for headaches. They chewed the roots for lower intestinal pain and enlarged glands, and they used them to quench thirst and quell excessive perspiration (Densmore 1918:270, 389; Buechel 1970:397). The Lakotas also ingested the plant to help endure extreme heat in their sweatlodges, and they applied the juices to treat burns (Gilmore 1913b: 368). Standing Bear (1978:60) said of this plant: "The long, slender black root of this plant, which grew abundantly on the plain, was chewed and applied to the injured place. Though not pleasant to taste, it eased pain and almost magically cured cuts and bruises." The plant was also used an antidote for venomous bites, to treat hydrophobia, and to heal wounds that had putrefied (Smith, H. 1928:212; Lame Deer in Fire and Erdoes 1972: 171). The Cheyennes made a salve out of it to treat a wide variety of external injuries and swellings (Hart 1981: 20; Whiteman in Schwartz 1988:53). The Omahas and Poncas mixed it in a solution to treat sore eyes (Gilmore 1919:131). The Crows, Kiowas, and Cheyennes treated colds with teas made from the roots and/or leaves (Hart 1981:20; Vestal and Schultes 1939:71). Additionally, Cheyennes brewed a tea to treat rheumatism, arthritis, mumps, and measles, and they combined the roots with other herbs to treat boils and smallpox (Hart 1981:20). Early travelers and settlers to the Plains quickly learned the medicinal value of the purple coneflower and applied it widely as a folk remedy (Kindscher 1992: 88-89; Tilford 1997:52-53).

[cosmetic & hygienic] The Kiowas used the dried inflorescence to comb and brush their hair (Vestal and Schultes 1939:71), and the Lakotas and Poncas probably did so as well given one of the names they use for the plant (Gilmore 1919:31; Buechel 1970:397).

[veterinary] The Lakotas treated distemper in their horses with it (Buechel 1970:200).

[art & manufacture] The Lakotas also mixed the petals of this flower in solutions to make yellow dyes (Lyford 1940:42).

[symbolic & ceremonial] Hart (1981:21) reports that the Cheyennes chewed the root during the Sun Dance to quench thirst. Hidatsa warriors used the root as a stimulant for endurance in travel (Nickel 1974:63). The Lakotas associated the plant with *Waziyata* [the North Wind] (Red Cloud High School 2001).

Erigeron **spp. [fleabanes]**

In the Plains region, American Indians used a number of different varieties of fleabane. Three of the varieties reported in the Black Hills, *E. Annus* [daisy fleabane], *E. pumilus* [low or shaggy fleabane], and *E. Philadelphicus* (Philadelphia fleabane) have documented uses in Native and European American folk remedies.

Names:

Cheyenne (Grinnell 1972 2:187; Hart 1981:21)
ma hom a uts is se'e ao [pink medicine]
*E. salsuginosus**
alternate: *ma?oma?ohtse-heseeo?otse*

Kiowa (Vestal and Schultes 1939:60)
a-kent-ein (white flower plant)
E. divergens [spreading fleabane]

Lakota (Buechel 1970:116, 118, 399; Rogers 1980:37)
canhlogan hu pteptecela [short stem weed]
E. pumilus

Habitat: In the Black Hills, the *E.annus* variety is sporadic at low elevations on the eastern side of the Hills (Larson and Johnson 1999:104-108). *E.pumilus* is the most widespread and common species of *Erigeron*, and it is located in environments similar to *E.canus.* Spreading, Philadelphia, three-nerve, and smooth fleabanes are reported at Wind Cave National Park (Pisarowicz 2001j:3).

Uses: *Erigeron* are widely distributed in North America and used by tribal nations throughout thearea (Kindscher 1992:95-98).

[medicinal] The Lakotas brewed a tea from *E. Annus* as a remedy for sore mouths in children and also as a treatment for urinary problems, and from *E. pumilus* came a treatment for rheumatism and stomach disorders (Densmore 1918:389). Cheyennes relied on the species *E.salsuginosus* in steam treatments, in teas to treat drowsiness and dizziness, and in a liquid solution applied to sore backs (Grinnell 1972:2:187).

[cosmetic & hygienic] European Americans burned fleabane to smudge their homes to rid them of gnats, fleas, and other small insects (Kindscher 1999:97).

[art & manufacture] The blossoms of *E. pumilus* were combined with brains, gall and spleen to produce a substance that bleached hides in tanning (Buechel 1970:399).

[symbolic & ceremonial] The Kiowas brought fleabane into their homes as an omen of good fortune (Vestal and Schultes 1939:60).

Eupatorium maculatum **[spotted joe pyeweed]**

Spotted joe pye weed, which is found at Wind Cave National Park, is a common plant in the Black Hills where it is typically located in wet habitats at low to mid elevations (Larson and Johnson 1999:110; Pisarowicz 2001j:3). In Lakota, it is called *wahca pepe'la* [prickly flower]. No use has been reported for it (Buechel 1970:519; Rogers 1980:37).

Euthamia graminifolia **[flattop goldenrod]**

This goldenrod is most common at low elevations in the southern regions of the Black Hills where it is found in moist locations such as wet meadows and stream banks (Larson and Johnson 1999:112). The Lakota name for it is *cannunga hu pteptecela* [bison calf's lumpy stem] (Buechel 1970:121).

Gaillardia aestivalis or aaristata **[blanketflower]**

Blanketflower is found occasionally in the Black Hills at low to high elevations in a variety of habitats (Larson and Johnson 1999:112), but its native uses are reported only for tribal nations who lived historically outside the region (Kindscher 1992:246-247).

Grindelia squaros **[curlycup gumweed]**

This plant is native to the western regions of North America where it is commonly found in pastures and along roadsides and railroads (Kindscher 1992:119).

Names:

Cheyenne (Hart 1981:21)
ho?eetohkonah [no translation given]

Lakota (Gilmore 1919:133; Buechel 1970:448; Rogers 1980:37)
pte ichi yuha [buffalo cows follow one another]
alternate: *pteiciyuha unma* [buffalo cows curl around each other]

Ponca (Gilmore 1919:133)
pezhe-wasek [strong herb]

Habitat: Curlycup gumweed is found in dry grasslands, pastures, and roadsides at low to mid elevations over the entire Black Hills including Wind Cave National Park (Larson and Johnson 1999:114; Pisarowicz 2001h:3).

Uses: This plant was widely used by tribal nations in the northern Plains for its many medicinal properties (Kindscher 1992:120-121). Its resin can be used as a chewing gum, but this has not been reported for any of the tribes in the Plains (Kindscher 1987:243).

[medicinal] The flowering tops were used by Cheyennes in treatments for skin disorders and eye inflammations (Hart 1981: 21), while the Crows employed it in treatments for respiratory disorders (Hart 1992: 32) The Lakotas made a remedy out of the plant to treat colic in infants and to stop the spitting of blood, while the Poncas and Lakotas took it as a medicine for consumption (Gilmore 1913b:368, 1919:133; Buechel 1970: 444). The Lakotas also relied on it to treat breathing complications and skin inflammations from contact with poison ivy (Red Cloud High School 2001). Early European American settlers drew on this plant to treat asthma, bronchitis, colds, and pneumonia and applied its resin to poison ivy rashes to relieve itching (Kindscher 1992: 120-121; Larson and Johnson 1999:114).

Machaeranthera pinnatifida/ Haplopappus spinulosus **[lacy tansyasteer/iron plant]**

This plant, which the Lakotas called *wahcazi wastemna* [sweet smelling yellow flower] (Buechel 1970:519), is one of many composite species found at Wind Cave National Park, but no use is reported for it.

Helenium autumnale **[common sneezeweed]**

Although not reported for the Black Hills, sneezeweed is widespread in North America where it grows in moist, low elevation prairie habitats (Kindscher 1992:252-253). According to Johnson and Larson 1999b: 120), this plant is most prevalent east of the Missouri River, but it does occur sporadically in regions west of the river. The Comanches are the only tribal nation who once lived in the general region to have had a documented use for this plant. They inhaled the flowers to induce sneezing to clear the nasal passages and also during childbirth to induce the expulsion of the afterbirth. In addition, the stems of the plant were soaked in water and the solution was applied to a patient to reduce fever (Carlson and Jones 1939:532-534). Shoshones and Arapahos at Wind River used another variety of sneezeweed [*H. hoopesii*]* in an inhalant for headaches (Nickerson 1966:48). Other tri-

bal nations with known uses for the plant are located in the eastern Woodlands (Kindscher 1992:252-253).

Helianthella quinquenervis **[fivenerve helianthella [false sunflower]**

Mostly found in the western and northern parts of the Black Hills, the false sunflower is not associated with any names or uses among the tribal nations who historically lived in the region (Larson and Johnson 1999:115).

Helianthus **spp. [sunflower]**

Sunflowers are among the most abundant and conspicuous wild plants in the northern and central Plains where they are common in pastures and grasslands and along roadsides and railway tracks (Johnson and Larson 1999:116). Nine different species are reported in the Black Hills. Of these, *H. annus* [annual sunflower] is the most widely used by the tribes who lived in the area, but *H.maximiliani* [Maxmillian's sunflower] is also identified in native botanical nomenclatures. Although *H. tuberosus* [Jerusalem artichoke] is not listed as local to the Black Hills proper, it was very common on the prairies, immediately to the north and east of the Hills, where it grows along stream banks, in prairies, and open wood wetlands (Kindscher 1987:130).

Names:

Cheyenne (Grinnell 1972:189; Hart 1981:21)
ho?e-noono [earth bulb, tuber]
H. annus
hohinon [brought back by scouts]

Kiowa (Vestal and Schultes 1939:60)
ho-son-a [looking at you]
H. annus

Lakota (Buechel 1970:430, 519; Rogers 1980:38)
pangi [no translation given]
H. tuberosus
wahca zi [yellow flower]
generic term for *Helianthus species*
wahca zi tanka (big yellow flower)
H. maximiliani

Plains Apache (Jordan 1965:66)
datizil [no translation given]
H. annus

Ponca (Gilmore 1919:130-131)
pangi [artichoke]
H. tuberosus
zha-zi [yellow weed]
H. annus

Habitat: *H.annus* and *H.paucifloria* are very common from low to mid elevations over the entire region of the Black Hills especially in grassland environments and along roadsides. *H.maxmilliani* is especially prevalent in moist Red Valley locations, while *H.nuttali* occurs only occasionally near moist habitats (Larson and Johnson 1999:116-118). *H.annus* is reported at Wind Cave National Park (Pisarowicz 2001h:3).

Uses: *H.annus* was once cultivated by several tribal nations in the region, and many tribes gathered the wild variety (Kindscher 1992:253-254). The Plains Apaches are the only tribe who apparently did not consume them (Jordan 1965).

[food] The seeds of *H.annus* were eaten raw, prepared by roasting and cooking, or dried and ground into a meal (Kindscher 1987:124). Lewis and Clark reported that the ground seeds were used to thicken soups and also made into breads (in Kindscher 1987:124-125). The Lakotas ate the stalks too (Buechel 1970:38). Although some tribes, such as the Hidatsas, cultivated sunflowers, they preferred the wild varieties for making oils (Wilson 1917:18-19). The Lakotas, Poncas, and Cheyennes ate the tubers of *H. tuberosus*, but they did not cultivate it. (Gilmore 1913b:369; Gilmore 1919:131; Standing Bear 1978:57; Walker 1982:128).

[medicinal] *H.annus* heads were used medicinally by the Lakotas to treat pulmonary ailments and fevers (Buechel 1970: 519; Gilmore 1913b:369; 1919:130; Red

Cloud High School 2001). The Kiowas chewed the coagulated sap to diminish thirst (Vestal and Schultes 1939:60).

[cosmetic & hygienic] Among its many uses, the Hidatsas applied the oil of *H. annus* as a hairdressing and skin lotion (Wilson 1917:18-19).

[art & manufacture] The Plains Apaches occasionally made windbreaks from tall sunflower stalks, and they also used them as tinder for starting fires (Jordan 1965: 66,157). The flower petals went into the making of a yellow dye among the Lakotas (Red Cloud High School 2001).

[symbolic & ceremonial] The Cheyennes used the flower heads of *H.annus* in their *Massaum* ceremony (Hart 1981:21), and Luther Standing Bear (1975:120) reports that the Lakota used sunflowers in the Sun Dance because "it is the only flower that follows the sun as it moves on its orbit, always facing it." The Lakotas also believed that when the sunflowers were ripe the buffalo were fat and their meat was good (Gilmore 1919:130).

Hieracium canadense **[Canadian hawkweed]**

In the Black Hills, this plant's distribution is restricted to the central and northern regions (Larson and Johnson 1999:120). There are no reported uses for it in any of the ethnographic and ethnobotanical sources on the tribal nations who once occupied the Hills and its immediate environs.

Hymenopappus filifolius **[fineleaf hymenopappus]**

The closely related *H.tenifolius** [wooly white hymenopappus] was used by the Lakotas, who named it *sunkhu'stipije* [horse hoof cure] (Buechel 1970:469; Rogers 1980: 38). This variety is found only on the open grasslands outside the Black Hills, but it is very similar to the *H.filifolius* species found in the Black Hills and located occasionally on the dry ridges and hillsides of the Hogback and Red Valley (Larson and Johnson 1999:120). Since the two species are very similar, both of them may have been used by the Lakotas to make a tea and salve to treat lame horses (Buechel 1970: 469).

Lactuca **spp. [wild lettuce]**

*L.oblongifolia** and *L.pulchella** are frequently found in the Black Hills at low to mid elevations in moist and open habitats (Larson and Johnson 1999:124). *L.serriola* [prickly lettuce], an import from Europe, is widely found in disturbed sites throughout the West (Tilford 1997:116); it is reported in Wind Cave National Park (Pisarowicz 2001j:3). All species found in the Black Hills are edible, and their roots yield latex that can be used as a chewing gum (Larson and Johnson 1999:124; Tilford 1997:116). Notwithstanding this, there are no reports of any food use for tribal nations in the vicinity of the Black Hills. The Lakotas are the only tribal nation reported to have had any name and use for wild lettuce. They had at least three names for the plant: *azun'tka yazan'pi on'piyapi* [kidney pain treatment] refers to *L.pulchella, wabluska hinsma iyececa* [like a hairy insect] designates to *L.oblongifolia*, and *wahpe inkpa jiji* [fuzzy white end leaf] denotes *L.serriola* (Densmore 1918:262; Buechel 1970:512; Rogers 1980:38). The Lakotas made the leaves of native varieties into a decoction that was used for kidney ailments (Densmore 1918:262-263).

Leucanthemum vulgare /Chrysanthemum lecantemum **[oxeye daisy]**

Oxeye daisy is very common in the central and northern Black Hills (Larson and Johnson 1999:94), but it is not named nor is it associated with any uses in the ethnobotanical literature for the tribal nations who lived in the region. Modern European American herbalists, however, use it for its

diuretic and homeostatic properties (Tilford 1997:106).

***Liatris* spp. [gayfeathers]**

Two *Liatris* species are reported for the Black Hills, *L.ligulistylis* [Rocky Mountain gayfeather] and *L.punctata* [Dotted Blazing Star or gayfeather]. Both of them are named in the ethnobotanical nomenclatures of the tribal nations who historically lived in the region, although *L.punctata* was the one most frequently used as food and medicine. It is also the one reported at Wind Cave National Park (Pisarowicz 2001h:3).

Names:

Comanche (Carlson and Jones 1939:522)
atabitsenoi [no translation given]
L. punctata

Kiowa (Vestal and Schultes 1939:61)
h-kon-a [no translation provided]
L. punctata

Lakota (Buechel 1970:484, 574; Rogers 1980:38)
tate'can nunga [wind swollen wood]
L. punctata
**can nunga* is a certain type of tree mushroom according to Buechel (1970:121)

tat'e'can nunga huiyececa [like the wind swollen wood]
L. lingulistylis
alternate: *wazimninkpa iyececa* [like the meadow rue]

Plains Apache (Jordan 1965:34)
'izetalzi.bize e. [crow food]
L. punctata

Ponca (Gilmore 1919:133)
aotashe [medicine]
L. aspera
alternate: *makan-sagi*

Habitat: *L.ligulistylis* is found only occasionally in the Black Hills at mid to high elevations in open forest and moist meadow environments, while *L.punctata* frequently appears at low to mid elevations in mixed grass prairie, sagebrush steppe, and open pine forest habitats (Larson and Johnson 1999:124-126).

Uses: The various species of *Liatrus*, which are distributed throughout the central prairie and plains regions of North America, were commonly used as a food and for medicinal purposes by the tribal nations who occupied the area (Kindscher 1987:142-45, 1992:136-140).

[food] The Kiowas and Plains Apaches ate the bulb-like root of *L.punctata*, which they reported had a carrot-like flavor (Vestal and Schultes 1939:61; Jordan 1965:34). This was true for the Lakotas as well but only as an emergency source of food (Red Cloud High School 2001).

[medicinal] *L.punctata* was dried and powdered by the Lakotas to treat heart pain (Densmore 1918:389; Lame Deer in Fire and Erdoes 1972:170). The pulverized roots, which the Lakotas claimed were hardened like the intestinal contents of a deer, were taken to strengthen the appetite (Buechel 1970:484). The Plains Apaches treated cuts with a decoction made from the roots of *L. punctata* (Jordan 1965:118), and the Comanches (Carlson and Jones 1939:522) treated swollen testes with a juice extracted from its roots. *L.aspera*, which was more commonly used by the Poncas, was applied in a medicinal remedy for childhood diarrhea (Gilmore 1919:133-134). European Americans used *L.punctata* as a diuretic among other medicinal uses (Moore, M. 1979:49).

[veterinary] The Lakotas also dried and powdered a mixture from *L.punctata* for a horse medicine (Densmore 1918:389), and the Poncas relied on *L.aspera* to strengthen their horses (Gilmore 1919:134).

[symbolic & ceremonial] Melvin Gilmore (1926:14) noted that when gayfeather came into bloom, the buffalo hunting tribal nations took this as a sign to travel to the Arikara villages because the corn would be ready to trade.

Lygodesmia juncea
[rush skeletonplant]

This is a plant of the plains, open forests, and sagebrush steppes of the West, and historically, it was used by many tribal nations in the region (Kindscher 1992:261-262).

Names:

Cheyenne (Hart 1981:22)
ma?xepheseeo?otse [big medicine]

Lakota (Buechel 1970:116,329; Rogers 1980:38)
maka'cansinhu [earth resin wood stem]
alternate: *canhlogan hu can swula un he tuktektel yuke* [small woodstem exists here and there].

Habitat: Dry grasslands, open sagebrush steppes, and open pine forests at low to mid elevations are the habitats for this plant, which is common in the Black Hills and at Wind Cave National Park (Larson and Johnson 1999:126).

Uses: Most of the uses reported for this plant are medicinal in nature (Kindscher 1992:261-262).

[food] Melvin Gilmore (1919:136) reports that tribal nations in the region used the latex from the plant's root as a chewing gum.

[medicinal] The Cheyennes considered this one of their most important medicinal plants, and it was procured to treat a whole range of illnesses. The roots were used in treating colds, tuberculosis, and mumps (Hart 1981:22). John Stands in Timber (and Liberty 1967:110) indicated that it was an essential ingredient in nearly all medicinal mixtures and decoctions. A tea made from the entire plant was brewed by the Lakotas to treat childhood diarrhea (Buechel 1970: 329). The Plains Apaches and Poncas made a tea to doctor sore eyes (Gilmore 1919:136, Jordan 1965:262). The Cheyennes, Lakotas, and Poncas also used it to stimulate milk production in nursing mothers (Gilmore 1919:136; Hart 1992:27).

***Matricaria* spp.**
[chamomile]

Two species of *Matricaria* are located in the Black Hills, and both *M. maritime/Tripleurospermum* [false mayweed] and *M. matricariodes/discoidea* [pineapple weed/ disc mayweed] have documented ethnobotanical uses.

Name:

Cheyenne (Hart 1981:22)
onone-voneshke-moxeshene [prairie dog mint]
M. matricarioides

Lakota (Buechel 1970:123; Rogers 1980:39; Lewis, T. 1990:134)
cansinsinla [little tree sap]
M. maritime and *Silphium laciniatum*

Habitat: Also known as wild chamomile or disc mayweed, pineapple weed *M. matricariodes* is found over the entire Hills at low to mid elevations in a variety of disturbed habitats, including parking lots, trails, and roadsides (Larson and Johnson 1999: 128). Surprisingly, it is not listed for Wind Cave National Park.

Uses: Although European Americans are known to use *Matricaria* species for culinary and medicinal teas, Native American usage appears to be restricted to medicinal and hygienic uses.

[food] European Americans took this and related varieties of *Matricaria* to make a beverage whose properties are similar to chamomile (*M. chamomilla)* tea (Tilford 1997:110).

[medicinal] The tops of the pineapple weed are an ingredient in many Cheyenne medicines (Hart 1981:22). The plant is known to have mildly sedative properties and antispasmodic affects on the stomach, and it is used much like chamomile tea in European

American folk remedies. Scentless chamomile or false mayweed is taken by the Lakotas to treat headaches (Lewis, T. 1990: 134).

[cosmetic & hygienic] The Cheyennes included the dried and pulverized flowers and leaves of the pineapple weed in a perfume mixture, and the Crows lined their baby cradles with the dried plants (Hart 1992:23).

[symbolic & ceremonial] Pineapple weed was part of a mixture blown on the bodies of Cheyenne Sun Dancers to keep them cool (Hart 1981:22).

Microseris cupidata **[false dandelion]**

This member of the aster family is reported in Wind Cave National Park (Pisarowicz 2001h:3); it is not mentioned in the ethnobotanical literatures on the tribal nations who lived in the area.

Onopordum **[Scotch thistle]**

Introduced from Europe, Scotch thistle represents a serious weed problem in the Black Hills. No uses of this plant are reported for European Americans or the tribal nations who lived in the area (Larson and Johnson 1999:128).

Petasites Sagittatus **[arrowleaf sweet coltsfoot]**

This coltsfoot species is confined to the central and northern Black Hills where it is uncommon in its appearance. Although there are no reported uses for the plant among the tribal nations who occupied the Black Hills in historic times, it has a long history as a popular cough suppressant and expectorant in European American herbal medicine (Tilford 1997:3 Larson and Johnson 1999:128).

Ratibida columnifera **[prairie coneflower]**

Prairie coneflower is abundant in the grasslands of the northern and central Plains, and it is a valuable medicinal plant for many of the groups who live in the region (Kindscher 1992:179-181; Larson and Johnson 1999b:132).

Names:

Cheyenne (Grinnell 1972 :2:188-89; Hart 1981:23; Whiteman in Schwartz 1988:53)
shi'shin o wuts' tse i yo [rattlesnake medicine]
she?shenovotse-heseeo?otse
alternate: *Maetomone* [blood weed]

Lakota (Densmore 1918:265; Gilmore 1919:131; Buechel 1970:92,355; Rogers 1980:39)
asanpi ijatke [drink milk with]
alternates: *napostan* [thimble]
wahcha-zi chiklala [little yellow flower]
winawazi hutkan [root of the bur]

Habitat: This is an extremely common plant over the entire Black Hills, where it occurs at low to mid elevations in mixed grass prairies, sagebrush steppes, meadows, and open forests (Larson and Johnson 1999: 132).

Uses: The prairie coneflower was used mostly for medicinal purposes.

[food] Melvin Gilmore (1913b:368, 1919: 131) reports that the Oglalas made a culinary tea from this coneflower, and that they found its smell pleasant, "*lila wash-temna*."

[medicinal] Certain unspecified parts of the plant were employed to stop hemorrhages, and a tea made from the tops was administered for stomachaches and headaches (Buechel 1970:355). Frances Densmore (1918: 265) reports that the stalk and leaves were brewed in a tea for pain in the side, while a decoction made from the root was used to treat earaches. Melvin Gilmore (1913b:368) indicates that the flowers were compounded with other plants for a remedy to treat chest pains and wounds. The Chey-

ennes boiled the leaves and stems with a yellow solution to relieve external pain, to draw out rattlesnake venom and to soothe skin rashes from poison ivy and other plant toxins (Grinnell 1972:2:188; Hart 1981:23). They also used the leaves to stop bleeding (Whiteman in Schwartz 1988:53).

[veterinary] The Lakotas administered an unspecified portion of the plant in remedies to make horses urinate (Buechel 1970:355).

[art & manufacture] The Lakotas used the plant's top as a nipple for feeding infants (Gilmore 1913b:368), and they also made a yellow dye solution from the petals (Lyford 1940:42).

Rudbeckia hirta **[blackeyed Susan]**

This *Rudbeckia* is also common in the Black Hills, where it is found in low to high elevation meadows, open forests, roadsides, and along drainages, and it grows at Wind Cave National Park. Although early settlers are reported to have used it for a kidney stimulant, there are no reports of its use for the tribal nations who occupied the area (Larson and Johnson 1999:132; Pisarowicz 2001j:2).

Rudbeckia laciniata **[cutleaf coneflower]**

The Cutleaf coneflower is found only occasionally in the central and northern Black Hills, and even though ethnobotanical uses have been documented for tribal nations from the eastern Woodlands of North America, there are no reports for groups who lived near the Hills (Larson and Johnson 1999:134).

Senecio **spp. [groundsels and ragworts]**

Ten different species of *Senecio* are found in the Black Hills but only four of these are described in Larson and Johnson's botanical work (1999:134). Of these, three have known names and/or uses among the tribal nations who inhabited the area. These are *Senecio canus**[Gray ragwort], *Senecio integerrimus* [Lambstongue ragwort], and *Senecio riddellii* [Riddell's ragwort].

Names:

Cheyenne (Grinnell 1972 :2:190-191; Hart 1981:23)
heove-heseeo?otse [yellow medicine]
S. integerrimus

Lakota (Buechel 1970:117,469, 520; Rogers 1980:39)
canhlogan suta [tough weed]
S. riddelli
sunkawakan tapejuta [horse's medicine]
S. canus
wahpe slusluta [slippery leaf]
S. integerrimus

Habitat: *Senecio canus* [Gray ragwort] appears frequently in the Hills at all elevations in dry and open sites in mixed grass prairies, sagebrush steppe, and open pine forest (Larson and Johnson 1999:134). *Senecio integerrimus* is commonly found at all elevations and in a wide variety of habitats, including Wind Cave National Park, while *Senecio riddelli* is occasional in appearance and restricted to low elevations in the southern foothills and Red Valley (Larson and Johnson 1999:136-138).

[medicinal] The Cheyennes brewed a tea from *Senecio integerrimus* for sedation and also treating chest pains (Grinnell 1972:2: 190; Hart 1981:23).

[veterinary] As its Lakota name implies, *Senecio canus* was applied as a horse medicine (Buechel 1970:469).

Silphium laciniatum **[pilotweed or compassplant]**

This plant is located in regions far to the east of the Black Hills, but it had a variety of different medicinal purposes among the Lakotas and Poncas (Gilmore 1919:132; Buechel 1970:123; Rogers 1980:39). Its Lakota name, *cansinsinla* [little tree sap], is also a name for chamomile.

The plant was used as an incense in the Lakota Sun Dance (Dorsey, J. 1894: 454).

***Solidago* spp. [goldenrod]**

Of the seven different goldenrod species, only two, *S. canadensis* [Canada goldenrod] and *S. rigida* [stiff goldenrod], are associated with any name or use by the tribal nations who once occupied the Black Hills. *S. Missouriensis*, however, has reported uses for tribal nations outside the area (Larson and Johnson 1999:140).

Names:

Lakota (Buechel 1970:117, 336, 447, 519; Rogers 1980:39)
wahca'ziblu (pulverized yellow flower]
S. canadensis
canhlogan maka'ayublaya [weed spread out on ground]
S. rigida
alternate:*mime'la wahcazi* [round yellow flower]
tal'agnake [place meat on]

Plains Apache (Jordan 1965:130)
cizekase'ize [cold & fever medicine]
S. caadensis

Ponca (Gilmore 1919:133)
zha-sage-zi [hard yellow wood]

Habitat: Canadian goldenrod is found frequently throughout the Black Hills and at Wind Cave National Park in moist meadows, flood plains, and open forests at low to mid elevations, while the stiff and Missouri goldenrods appear commonly at all elevations in grasslands, meadows, and open forests (Larson and Johnson 1999:138, 140, 144; Pisarowicz 2001j:3).

Uses: Goldenrods appear to have been used primarily for medicinal purposes.

[medicinal] The Plains Apaches used an unidentified species of *Solidago* to treat fever (Jordan 1965:131-133). Tribes outside the region used *S. missouriensis* for toothaches and sore throats (Larson and Johnson 1999:140). Historically, the plant was widely taken by European Americans to treat upper respiratory disorders and as a styptic agent (Tilford 1997:66).

[art & manufacture] As one of the Lakota names for this plant suggests, its leaves were probably used as a mat to keep meat clean while butchering (Buechel 1970:117).

[symbolic & ceremonial] The blooming of goldenrod was a calendrical sign for the Poncas to return home from their buffalo hunts, which once took place near the Black Hills, in order to tend to their ripening corn fields (Gilmore 1919:133).

***Sonchus arvensis* [field sow thistle]**

This is another species reported at Wind Cave National Park (Pisarowicz 2001k:3), but one for which no information is found in ethnobotanical sources on the region.

***Symphyotrichum* spp. [aster]**

Of the different species of aster located in the Black Hills, only two have been named in ethnobotanical sources for tribal nations who historically occupied the area. Tribal nations, who lived outside the region of the Black Hills, are known to have used aster species including some of those found in the Hills (Kindscher 1992:60-63).

Names:

Cheyenne (Grinnell 1972 :2:187; Hart 1981:19)
sto' wahts is se ' e yo [ear medicine]
Symphyotricum cilolatum
alternate: *hestovootse-heseeo?otse*

Lakota (Buechel 1970:117, 519; Rogers 1980: 36)
canhlogan pepela [prickly stem]
*Aster hebecladus**
wahca'zi waste [good yellow flower]
Symphyotricum falcacum
wahca'zi wastemna [good smelling yellow flower]
Symphyotricus oblongifolium

Habitats: White prairie aster [*Symphyotricum falcacum* or *A. commutatus*] is common throughout the Black Hills in sagebrush steppe, mixed grass prairies, meadows, and open forests from low to high elevations (Larson and Johnson 1999:82). New England aster [*Symphyoticum novae-angliae* or *A. novae-angliae*] is occasional but restricted to the central and northern areas (Larson and Johnson 1999:86). Aromatic aster [*Symphyotricum oblongifolium* or *A. oblongifolias*] is ubiquitous and frequently located in dry grassland areas mainly at low elevations (Larson and Johnson 1999:88). Smooth blue aster [*Symphyotirucm laevae* or *A. laevis*] and the Siskiyou aster [*Symphyotricum hesperium* or *A. hesperius*] are reported in Wind Cave National Park (Pisarowicz 2001j:3).

Uses: Although the Lakotas had names for three different species of aster, only the Cheyennes are reported to have had any use for them.

[medicinal] The Cheyennes made an infusion from the dried stems of *Symphyotricum cilolatum* [*A. foliaceus*] to relieve earaches (Grinnell 1972:2:187; Hart 1981: 19). Tribal nations in eastern North America used *S. novae-angliae* for healing a wide range of maladies (Larson and Johnson 1999:86).

Tanacetum vulgare
[tansy]

This plant is ubiquitous in North America, where it is typically found in moist environments in pastures and meadows and along roadsides and irrigation ditches (Tilford 1997:212). It is locally abundant in areas of the northern and central Black Hills, where it appears at low to mid elevations in flood plains and along stream margins (Larson and Johnson 1999:146). It appears at Wind Cave National Park too (Pisarowicz 2001k:4). The Cheyennes called it *heove-heseeo?otse* [yellow medicine], and they made a tea from the leaves and flowers to treat fatigue (Grinnell 1972 :2:190-191; Hart 1981:23). Although this plant has many pharmacological properties (Tilford 1997:192), its medicinal use has been reported only for the Cheyennes. The plant remains, however, popular in European American folk medicine, taken for a wide variety of purposes from treating jaundice to expelling intestinal worms (Tilford 1997:192).

Taraxacum officinale
[dandelion]

One of the most widely recognized weeds in the Black Hills and in other regions of North America as well, the dandelion is known to be rich in many essential vitamins. It is edible and has a long history of medicinal use in European American folk medicine (Tilford 1999:48). It was introduced to the Black Hills by settlers for their own culinary and medicinal purposes, and today, it is common and often locally abundant throughout the Black Hills at mid to low elevations in a wide range of habitats (Larson and Johnson 1999:148). There is no evidence that it has been adopted and used by the tribal nations who resided in the region, however.

Tetraneuris acaulis
Hymenoxys acaulis
[stemless four-nerve daisy]

There is no information on the name or use of this plant in ethnobotanical sources for the tribal nations who lived in the region, although it is very common in the Black Hills in a wide range of dry habitats at all elevations (Larson and Johnson 1999:122).

Thelesperma megapotamicum
[thelesperma]

This plant is located in Wind Cave National Park (Pisarowicz 2001h:3), but nothing has been recorded about it in the ethnobotanical literature.

Townsendia exscapa
[Easter daisy/ stemless Townsend daisy]

This plant is uncommon in the Black Hills and restricted to the dry and open grasslands of the southern Black Hills (Larson and Johnson 1999:148). Lakotas call it *ih'eh'e canhlogan* [rock stem], but there are no reported uses for it (Buechel 1970:218; Rogers 1980:40).

Tragopogon dubius
[yellow salsify]

Also known as groundsel or oyster root, this plant was introduced to North America by early settlers as a vegetable crop. It is frequent in the Black Hills at low to mid elevations in a wide range of habitats. It is also found at Wind Cave National Park (Pisarowicz 2001k:4). No report on its usage among local American Indian populations has been uncovered, however (Tilford 1997: 132; Larson and Johnson 1999:150).

Xanthium strumarian
[cocklebur]

In the Black Hills, the cocklebur is common at low elevations in habitats with disturbed soils (Larson and Johnson 1999:150). The Lakotas named it *winawizi hu tanka hca* [jealous woman stem that is the biggest], and they used it as incense, *silyapi*, in some of their ceremonies (Buechel 1970: 587; Rogers 1980:40).

Boraginaceae
Borage Family

Several members of the Borage family grow in the Black Hills, but only the gromwells and false gromwell had applications among tribes in the region. Wild comfry and Hound's tongue, which were not significant to the region's tribal nations, do have value in European American folk remedies.

Cryptantha celosioides
[buttecandle]

Butte candle is found throughout the Black Hills at low to mid elevations on dry slopes and ridges in grassland areas. It is called *canhlogan ape'pepe* [prickly leaf weed] (Buechel 1970:116; Rogers 1980:40), but no use is reported for it.

Cynoglossum spp.
[wild comfry]

Both *C. virginianum* [wild comfry] and *C. officinale* [hound's tongue] are used in European American folk medicine, often serving as substitutes for each other. Both are ingredients in salves and poultices to treat burns and skin inflammations, and in earlier historical times, they were taken internally to treat respiratory disorders (Tilford 1997:78). There is no mention of these plants in the ethnobotanical sources for the tribal nations who lived in the region. These plants are commonly located at low to mid elevations in open forest clearings and meadows over the entire Black Hills (Larson and Johnson 1999:154), and hound's tongue is found at Wind Cave National Park (Pisarowicz 2001k:2).

Hackelia floribunda
[manyflower stickseed]

This plant is common over a wide range of habitats in the Black Hills, but there are no reports of its use by American Indians or European Americans in the region (Larson and Johnson 1999:154).

Lappula occidentalis
[desert/flatspine stickseed]

Called *hupe'pe* [prickly stem] in Lakota (Buechel 1970:190), the desert stickseed and its relative *L.floribunda* [many flowered stick-seed] are not associated with any ethnobotanical uses either by European Americans or the tribal nations who occupied the Black Hills. Desert stickseed is

found frequently in the Black Hills at low to mid elevations in areas that have been disturbed and eroded, especially roadsides and pastures but also barren spots in grasslands and open forest (Larson and Johnson 1999: 156).

***Lithospermum* spp. [gromwell]**

Only one species of gromwell is reported for the Hills, *L.incision* [Narrowleaf gromwell], but this and others were widely used by the tribal nations of the region for medicinal and other purposes (Kindscher 1992: 142-45). Most of the other species, including *L.caroliniense* [Carolina puccoon] and *L canescens* [hoary puccoon], are found in the prairie regions east of the Black Hills (Johnson and Larson 1999b:146).

Names:

Cheyenne (Grinnell 1972:2:185; Hart 1981:15)
hoh' ahea no is' tut [to revive life]
L. incisum

alternate: *hoahea-notahtsestotse*
noahea-nohtsetotse
woh' po it [whitish plant growth]
L. ruderale

Lakota (Buechel 1970:440; Rogers 1980:40,41)
pejuta wah'e sa [red root]
L. gmelini or *L. caroliniense*
alternate: *pejuta ha sapa* [root with black skin]
pejuta sapsapa [black root]
L. incision

Plains Apache (Jordan 1965:118)
'izelicihi [red medicine]

Ponca (Gilmore 1919:111)
bazu-hi [no translation given]
L. canescens

Habitat: The narrowleaf gromwell grows over the entire region of the Black Hills, including Wind Cave National Park, from low to mid elevations in grassland and open forest habitat (Larson and Johnson 1999: 156; Pisarowicz 2001h:2).

Uses: Gromwells were very important medicinal plants for the tribes of the northern Plains, but there are no reported uses for them among European Americans.

[medicinal] The Cheyennes ground the leaves, roots and stems of *L. incision* into a small quantity of powder that was rubbed on paralyzed parts of body. They also crushed the fresh leaves, either in cloth or by chewing, and applied them to the afflicted parts of the body. The Cheyennes also made a tea from the roots, leaves, and stems that were rubbed on a patient's head and face to treat delirium and to prevent them from sleeping too much. Another application involved chewing these parts of the plant and then rubbing them over a patient's heart or spitting and blowing it on their face (Grinnell 1972:2:185; Hart 1981:15). The Lakotas made a powder from the roots of the narrowleaf gromwell to treat chest wounds (Buechel 1970:440; Lame Deer in Fire and Erdoes 1972:171). *L.ruderale* was also used by the Cheyennes as a treatment for rheumatism; the stems and leaves were finely pulverized and moistened and then applied to the skin as a poultice (Grinnell 1972:2: 185; Hart 1981:16). *L.caroliniense* was a medicine used by the Lakotas to treat lung hemorrhages (Densmore 1918:269-70). The Plains Apaches prepared a tea from *L. incisum* to treat diarrhea and other stomach disorders. It was also combined with raccoon liver, brown sugar, and another unidentified plant in a decoction to heal sore mouths in children (Jordan 1965:118-119).

[art & manufacture] Omaha (and Poncas) extracted a yellow dye from the flowers of *L. canescens* (Gilmore 1919:111).

***Mertensia lanceolata* [lanceleaf or prairie bluebells]**

Also known as lungwort and chiming bells, lanceleaf bluebells are edible (Tilford 1997: 32) and widely distributed in the Black Hills in a wide range from habitats from low to high elevations, including locations in Wind Cave National Park (Larson and Johnson 1999:158; Pisarowicz 2001j:1). Only the

Cheyennes are reported to have used them; the leaves were made into infusions to treat smallpox and measles as well as to increase milk production in nursing mothers (Hart 1981:16).

Myosotis scorpiodes
[forget-me-not]

This plant, which is occasionally found near springs and spring fed streams in the Black Hills, is not reported to have had any uses among local American Indian and European American populations (Larson and Johnson 1999:158)

Onosmodium molle
[false gromwell or softhair marbleseed]

This is a common plant in the northern Plains typically found on the dry, rocky, and sandy hillsides of prairies, pastures, and open woods in the central regions of the Plains (Kindscher 1987:265).

Names:

Cheyenne (Grinnell 1972:2:185)
mak esk o wa ni'a [big rough medicine]

Lakota (Buechel 1970:445, 469; Rogers 1980:40)
sunkcan kahuipiye [something to fix horses' spine]
alternate: *poi-piye* [something to fix swelling]
*note: This term is applied generally for any medicine that treats swelling (cf. Buechel 1970:445).

Habitat: False Gromwell is frequently found at low to mid elevations in mixed grass prairies, meadows, and open forest throughout the Black Hills (Larson and Johnson 1999:180), and it is located at Wind Cave National Park (Pisarowicz 2001h:1).

Uses: The Cheyennes and Lakotas are the only two tribal nations in the region who have names and uses associated with this plant.
[medicinal] The Lakotas made a tea and a salve from the roots and seeds of this plant to treat external swelling (Buechel 1970: 445), while the Cheyennes pulverized the leaves and stems and mixed them with grease for a salve that treated numbness and lumbago (Grinnell 1972:2:185).

[veterinary] The Lakotas administered the plant both internally and externally in medicinal treatments for their horses (Buechel 1970:469).

[art & manufacture] Johnson and Larson (1999b:148) also report that the stone-like seeds were used in the making of ceremonial rattles but the origins of this information are not reported.

Brassicaceae
Mustard Family

This family contains a diverse array of species with many different varieties in the Black Hills (Larson and Johnson 1999:160).

Alyssum desertorum
[dwarf alyssum or desert madwort]

Located mainly at low elevations, usually in disturbed grassland and open forest environments, the dwarf alyssum is frequent in its occurrence at low elevations. It grows at Wind Cave National Park (Larson and Johnson 1999:161; Pisarowicz 2001k:1). It is not associated with any uses among local American Indian and European American populations.

Arabis glabra
[tower rockcress]

This is the most common of the five rockcress species found in the Hills (Larson and Johnson 1999:162).

Names:

Cheyenne (Grinnell 1972 :2:174; Hart 1981:24)
*e hyov' i se e yo*alternate: *heove-heseeo?otse*

Lakota (Buechel 1970:117; Rogers 1980:41)
canhlogan huwanjila [stalk with one stem]
A. hirsuta [Hairy rockcress]

Habitat: Rockcress is occasionally found in the Black Hills at all elevations and in a wide variety of different habitats (Larson and Johnson 1999:162).

Uses: This plant is not associated with any uses for European Americans. Among American Indian populations in the area, only the Cheyennes appear to have made use of it.

[medicinal] The Cheyennes used rockcress as a preventive medicine to stave off a cold or other sickness. It was administered as an infusion and given to children when contagious illnesses were spreading in the camps (Grinnell 1972:2:174-75).

Barbarea vulgaris [yellow rocket]

Yellow rocket is reputed to be edible, but it has toxic qualities that can lead to kidney malfunctions. It is located in the north and central regions of the Black Hills in moist locations at low to high elevations (Larson and Johnson 1999:162). The ethnobotanical literature on the tribal nations of this region yields no information on this plant.

Berteroa incana [hoary false alyssum or madwort]

This plant has been naturalized in the Black Hills only in recent years. It is found occasionally in the central regions at low to mid elevations (Larson and Johnson 1999: 164). No uses have been associated with it in European American or American Indian medical traditions.

Camelina microcarpa [littlepod falseflax]

Littlepod falseflex is common throughout the Hills at low to mid elevations in a wide range of habitats, including those at Wind Cave National Park (Larson and Johnson 1999:164; Pisarowicz 2001k:2). It is another plant for which there are no reports of any usage in ethnobotanical sources.

Capsella bursa-pastoris [shepherd's purse]

Shepherd's purse is very common over the entire western United States, and it is found at Wind Cave National Park (Pisarowicz 2001k:3). The Cheyennes called it *ota?tave-heseeo?otse* [blue medicine] (Grinnell 1972: 2:174; Hart 1981:24), and they made a cold water infusion or a pulverized powder from the plant to treat colds (Grinnell ibid.). European Americans used the seeds in traditional mustard plasters and for a wide variety of other medicinal treat-ments (Tilford 1997:158).

Chorispora tenella [blue mustard or crossflower]

Blue mustard is not reported to have any uses in ethnobotanical sources. Introduced to North America from Asia, it is common throughout the Hills in a wide range of low to mid elevation habitats, including those at Wind Cave National Park (Larson and Johnson 1999:166; Pisarowicz 2001k:3).

Descurainia sophia [fixed tansymustard]

Fixed tansymustard, which is not associated with any uses in ethnobotanical sources, was introduced to North America from Eurasia. It is common throughout the Hills in a wide variety of habitats at all elevations (Larson and Johnson 1999:166).

Erysimum asperum [western or sanddune wallflower]

This plant's range is restricted to the High Plains. Although it is widely found in the Black Hills and surrounding areas, only the

Lakotas and Arikaras are reported to have had any specific use for it (Kindscher 1992: 244-245).

Names:

L**akota** (Buechel 1970:117, 519)
canhlogan pa [bitter weed]
alternative *wahca zi sicamna* [bad smell yellow flower]

Habitat: This plant is found over the entire Black Hills region at low to mid elevations in mixed grass prairie and sagebrush steppe (Larson and Johnson 199:168), and it grows at Wind Cave National Park (Pisarowicz 2001h:3).

Uses: The uses for this plant appear to have been restricted to medicinal applications.

[medicinal] Among the Lakotas, the entire plant was dried and either chewed or prepared as a tea to treat stomach and intestinal cramping; the crushed seeds mixed in water were also used for the same purpose (Densmore 1918:269, 389). The Arikaras are reported to have employed it for unidentified medicinal reasons (Kindscher 1992:244).

Hesperis matronalis **[dames rocket]**

Introduced as an ornamental plant in North America from Europe, this plant is common throughout the Black Hills especially around towns and settlements (Larson and Johnson 1999:168). It is also found at Wind Cave National Park, but it is not associated with any names or uses by the tribal nations who lived in the area (Pisarowicz 2001k:2).

Lepidium densiflorum **[pepperweed]**

Like other members of the mustard family, pepperweed is known to stimulate the production of digestive juices. This mustard is widely distributed across North Ameri-ca (Tilford 1997:158). Two varieties are found at Wind Cave National Park, *L.cam-pestre* [field pepperweed] and *L.perfoliatum* [clasping pepperweed] (Pisarowicz 2001k: 4).

Names:

Lakota (Buechel 1970:659; Rogers 1980:41)
zitka'la tawote [small bird's food]
*also used for *Lotus corniculatus*
[prairie bird's foot trefoil]

Habitat: This plant is very common in the low to mid elevation grasslands, open forests, and roadsides of the Black Hills (Larson and Johnson 1999:170)

Uses: The Lakotas are the only tribal nation in the region reported to have named and used pepperweed.

[food] Larson and Johnson (1999:170) report that the plant's leaves are edible, but its consumption has not been reported for the tribes of the region.

[medicinal] The Lakotas made a tea from pepperweed for kidney ailments (Buechel 1970:659), and European American settlers used it for similar purposes (Larson and Johnson 1999:170).

Lesquerrella ludoviciana **[foothill bladderpod]**

This is the most common of the four bladderpod species in the Black Hills. It is frequently found in dry habitats with sandy or gravely soil (Larson and Johnson 1999:170). The Lakotas call it *pangi pepe* [prickly tuber] (Buechel 1970:489; Rogers 1980:41), but there are no reports on its use.

Nasturtium Officiale **[watercress]**

This is used as a popular green in salads today. Although introduced from Europe, watercress has been naturalized in many

different locations throughout the United States. In the Black Hills, it is typically found near springs and spring-fed streams at low to mid elevations over the entire region of the Black Hills (Larson and Johnson 1999:172). Although many plants from Eurasia naturalized on North American soil are not identified in native nomenclatures nor used, watercress was adopted and became a popular food staple in the diets of some American Indian tribes. The Plains Apaches called it *koya' ito* [water leaves] and ate it either raw or boiled (Jordan 1965:36). The Utes did so too (Albers and Lowry 1995:70). European Americans have long used it as a salad green (Tilford 1997: 154).

***Sisymbrium* spp.**
[mustard]

S.altissimum [tumbling mustard] is an edible plant commonly located in disturbed locations at low to mid elevations throughout the Black Hills (Larson and Johnson 1999:174); it is also located at Wind Cave National Park (Pisarowicz 2001k:3). The ethnobotanical literature contains no reports of uses for this plant among the tribes who lived in the region, although the Lakotas have a name for it, which is *canglogan wabluska hu* [insect weed stem]. The name reportedly refers to its fringed, leg-like leaves (Buechel 1970:117; Rogers 1980:42). *S.loeselii* [tall hedgemustard], which was introduced from Eurasia, is less common but scattered across many of the same habitats as tumbling mustard (Larson and Johnson 1999:174).

Thlaspi arvense
[pennycress]

Also known as Frenchweed, this is another plant naturalized in North America from Europe. It is very common throughout the Black Hills in a wide range of environments at all elevations (Larson and Johnson 1999: 176). It is present at Wind Cave National Park (Pisarowicz 2001k:4). No names or uses have been documented for it in the ethnobotanical literatures on the tribes who occupied this region.

Cactaceae
The Cactus Family

There are several different species of cacti in the Black Hills, and of these two have been associated with names and uses in ethnobotanical sources on the region. Another cacti not listed in Larson and Johnson (1999), the Nylon hedgehog, grows at Wind Cave National Park (Pisarowicz 2002b:1).

Coryphantha Missouriensis
[pincushion cactus]

This cactus is found in the foothill prairies of the Black Hills where it typically grows in dry and rocky locations (Larson and Johnson 1999:176). It also appears at Wind Cave National Park (Pisarowicz 2002b:1). The pincushion cactus was used largely as a source of food. The Hidatsas ate the fruit of this cactus fresh and roasted (Nickel 1974: 67), while the Cheyennes consumed them while they were fresh or after they had been dried. In the Cheyenne language, this cactus is called *maatahesono* or alternatively *mataha* (Hart 1981:16).

***Opuntia* spp.**
[pricklypear cactus]

Three varieties of this cactus are reported in Black Hills area, *O.fragilis* (fragile pricklypear), *O.mascrorhiza* (bigroot pricklypear), and *O.polyacantha* (plains pricklypear) (Larson and Johnson 1999:178-179). Most of the native names for pricklypears appear to be generic and include the different varieties.

Names:

Cheyenne (Grinnell1972:2:180; Hart 1981:16)
mah-ta'-o-munst [prickly fruti]
alternates: *heshkove-mata* [thorny]
mataha?ome (-notse)
O. polyacantha

Comanche (Carlson and Jones 1939:523)
wekwesi [no translation given]

Kiowa (Vestal and Schultes 1939:45)
sen-adl-gaw [no translations given]
alternates: *sen'alo*
a-lo

Lakota (Buechel 1970:506-07)
unkce'la blaska [flat cactus]
unkce'la tanka [large cactus]

Plains Apache (Jordan 1965:38)
gosci.s [red sticker]

Habitat: Of the varieties located in the Hills, the Plains pricklypear is the most common. It is located over the entire area at low to mid elevations in the sandy and rocky soils of the dry grasslands and sagebrush steppes. The bigroot variety is restricted to the southern parts of the area and is typically found in dry grassland habitats, while the fragile pricklypear is found only occasionally in these habitats (Larson and Johnson 1999:178). Pricklypears also grow at Wind Cave National Park (Pisarowicz 2002b:1).

Uses: The tribal nations of the northern and central Plains had many different uses for pricklypear cacti.

[food] The Lakotas ate the fruit, *taspu*, raw or stewed, and they also ate the stems when other foods were scarce (Gilmore 1913b: 366; Bordeaux 1929:130; Standing Bear 1978:59; Brown 1992:12). Hassrick (1964: 179) quoted a Lakota woman who said,

> From the cactus we gathered the red tops or fruit and often brought them home, worked them around in a deerskin to remove all the thorns. Next we crushed them with a pestle and mortar in a rawhide bowl in much the same way we pounded cherries, and placed them in rows to dry. From this, we made mush, sometimes adding a little fat.

The Cheyennes dried the fruits as well, and they used them in meat stews and as a thickening agent for soups (Grinnell 1972:2: 181; Hart 1981:16-17). The Comanches dried the unripe fruit, which they stored and eventually cooked with other foods (Carlson and Jones 1939:523), while the Plains Apache ate them fresh and raw when they were picked in the fall (Jordan 1965:38). The Kiowa also candied the tunas and made them into jams (Vestal and Schultes 1939: 45). Pricklypears were also consumed in emergency times as food and for water (Kindscher 1987:156-157). Early American settlers in the West quickly learned the food value of these cacti (Ibid:158).

[medicinal] The Lakotas made a tea from the roots to promote urination, and they also mixed them with yucca in an obstetrical decoction (Buechel 1970: 506). The Lakotas, Kiowas, and Plains Apaches applied the mucilaginous juice from the stems in a dressing for wounds (Gilmore 1919:136; Vestal and Schultes 1939: 545; Jordan 1965: 125). Modern herbalists use the mucilaginous juice as an emollient to soothe dry skin and also as an anti-inflammatory agent to treat digestive and urinary tract maladies (Tilford 1997: 118).

[cosmetic & hygienic] The Kiowas and Plains Apaches punctured the skin in their ear piercings with the thorn of this cactus (Vestal and Schultes 1939:45; Jordan 1965: 149).

[art & manufacture] Melvin Gilmore (1919:136) reports that the Lakotas used the mucilaginous juice as a sizing to fix colors painted on hides. The Kiowas took the sharp thorns to make small arrows, and they also applied the mucilaginous juice to moccasins as a varnish (Vestal and Schultes 1939:45).

[symbolic & ceremonial] This cactus is featured in a Lakota story narrated by Left Heron (Walker 1983:128-129).

Campanulacae
The Bellflower Family

Only one species from this family is reported in the Black Hills, *Campanula rotundifolia* [harebell] (Larson and Johnson 1999:180). Although this is very common in the Hills and is reported at Wind Cave National Park (Pisarowicz 2001j:1), no names have been found for it in native nomenclatures. Two other species from the bellflower family, however, were identified and named by the Lakotas, and both of these are found in regions east of the Black Hills. The Lakotas call the *Lobelia siphilitca* [great blue cardinal or great lobelia] *zuze'ca tawote unma ape toto he* [the other blue snake food] (Buechel 1970:660). The *Triodanis leptocarpa* [slimpod Venus' looking glass] is named *canhlogan cankcanla* [tall swaying weed], while the *Triodanis perfoliata* [clasping Venus' looking glass], which is also located in Wind Cave National Park, is known as *canhlogan cankcanla* [tall moving weed] (Buechel 1970:117; Pisarowicz 2001h:1). The Pawnees held the Red lobelia, *Lobelia cardinalis* [cardinalfower], in high regard and considered it a highly sacred medicinal plant, which they may have even cultivated in their Nebraska homeland (Gilmore 1919:129).

Cannabaceae
The Hemp Family

Only one species in this family**,** *Humulus lupulus* [hop], is reported for the Black Hills. Hops are occasionally found in the Black Hills in moist deciduous woodland habitats at low to mid elevations (Larson and Johnson 1999:181). The Lakotas and the Poncas are the only tribal nations in the region associated with a name and use for hops. The Lakotas call them *wahkpe akikaskapi* [leaves look like they are tied together] or *winakapo* [to make things swell] (Buechel 1970:520, 586; Rogers 1980:51). Buechel (Ibid:586) writes that hops were an ingredient in Lakota bread making. The Lakotas also made a tea from this plant to treat fever and intestinal cramping, and the inner portion of the root was chewed with the root of ground cherry and meadow anemone to make a poultice for wounds (Gilmore 1913b:362, 1919:86; Lewis, T. 1990:135). The Poncas named them *maka skithe* [sweet medicine] (Gilmore 1919:86), implying they had some kind of medicinal use. The Poncas' cousins, the Omahas, considered it one of the healing plants associated with the Buffalo Medicine Society (Fletcher & La Flesche 1972:2:487).

Capparaceae
The Capper Family

Cleome serrulata [Rocky Mountain beeplant] and *Polanisia dodecandra* [clammy weed] are the only plants in the Capper family reported in the Black Hills and at Wind Cave National Park. The Rocky Mountain beeplant is occasionally found in low elevation, dry grassland environments, especially in the Hogback and Red Valley (Larson and Johnson 1999:182; Pisarowicz 2001h:1). The Lakotas are the only tribe reported to have named the plant, and they called it *wahpe h'eh'e* [ragged leaf] (Buechel 1970:520; Rogers 1980:42). Many tribal nations in the American Southwest boiled this plant and ate it, much like spinach (Kindscher 1987:92-93), but there are no reports of such use for the nations who historically lived in the region of the Black Hills. The early explorer, Joseph Nicollet (in DeMallie 1976: 281) reported it was one of two plants the Dakotas used to attract bison. Other species in this family, *Cristatella/ Polanisia jamesii* [James' clammyweed], which is known as *makomnica* [earth bean weed] (Buechel 1970:52; Rogers 1980:42), and *Polanisia dodecandra* [clammyweed], which is called *wahpe hla* [rattle leaf] (Buechel 1970:520), have no reported uses.

Caprifloiacae
Honeysuckle Family

Linnea borealis (twinflower) is the only flowering forb species from the honeysuckle family associated with the Black Hills. It is restricted to the central and northern regions of the area, and it is not identified in any of the ethnobotanical source materials used for this report (Larson and Johnson 1999:183).

Caryophyllacae
Pink Family

There are seven flowering forb species from the Pink family reported the Black Hills: *Arenaria lateriflora* [bluntleaf sandwort], *Cerastium arvense* [field chickweed], *Cerastium fontanum* [mouse-ear chickweed], *Silene pratensis* [white campion],* *Silene vulgaris* [bladder campion],* and *Stellaria longtifolia* [Long leaved stitchwort]* (Larson and Johnson 1999:184-188). Field chickweed and mouse-ear chickweed are both reported at Wind Cave National Park and common over the entire region in a wide range of habitats. The others are restricted to the moister environments of the central and northern Hills (Pisarowicz 2001i:3, 2001k: 2). Although field chickweed is associated with medicinal uses in European American folk medicine (Tilford 1997:30), there are no reports on its identity or use in the literatures on American Indian populations from the area.

Chenopiaceae
The Goosefoot Family

Chenopodium are the only plants in the goosefoot family reported in the region of the Black Hills. These are not covered in Gary Larson and James Johnson's botanical inventory (1999) of the Black Hills. A few species, however, are located at Wind Cave National Park. These include: *Chenopodium album* [lambsquarters], *Chenopodium berlandieri* [pitseed goosefoot] and *Kochia scoparia* [Mexican-fireweed] (Pisarowicz 2001h:2, 2001k:3). Goosefoot and other pigweeds are common in the plains region and North America more generally. *Chenopodium berlandieri* was an ancient food plant in the plains, while *C.album* was introduced and naturalized in North America (Kindscher 1987:79-83).

Names:

Kiowa (Vestal and Schultes 1939:25)
batl-sai-an [stink weed] species unspecified
alternate: *badl-sai-ya-don*

Lakota (Buechel 1970:117, 574; Rogers 1980:43)
canhlogan inkpa gmigmela [small round point stalk]
C. album
wazimninkpa iyeca [its like *wazimninkpa*] designates
C. hybridum/simplex [mapleleaf goosefoot]
canhlogan owicak'o
Cyclolma atriplicifolium [winged pigweed]

Habitat: According to Kelly Kindscher (1987:80), goosefoot and related pigweeds are found along roadsides, pastures, and waste grounds.

Uses: *Chenopodium* species were used mostly as foods by native populations in North America, but they had medicinal functions as well (Kindscher 1987:81-82).

[food] The Lakotas boiled the immature plant greens of *C.album and C.hybridum* for food or prepared them as a mush (Gilmore 1919; Buechel 1970:117, 574). The Kiowas (Vestal and Schultes 1939:25) also consumed them, even though they believed that the plant was put on the earth "to bother Indians or drive them away from dangerous places" (Vestal and Schultes 1939:25). They were a popular source of greens for European American travelers and emigrants in the nineteenth century (Kindscher 1987: 82).

[medicinal] The Lakotas used the entire plant of *C.album* as a remedy for bloody dysentery in children (Densmore 1918:267).

Clusiaceae
The Mangosteen Family

Only one species is reported in the Black Hills, *Hypericum perforatum* [St. Johns wort] (Larson and Johnson 1999:188). In recent times, this plant has become a popular herbal remedy for the treatment of depression (Tilford 1997:130). It is scattered over the northern and central Black Hills in disturbed meadows and open forests at low to mid elevations (Larson and Johnson 1999: 188). There is no evidence, however, in the ethnobotanical literatures for any medicinal use among the tribal nations who occupied the Black Hills.

Commelinaceae
The Spiderwort Family

Tradescantia species are the only ones reported from this family in the Black Hills. Spiderworts are common in the northern and central plains (Kindscher 1987:217-219). In the Black Hills, there are two species, *Tradescantia bracteata* [longbract spiderwort] and *T.occidentalis* [prairie spiderwort]. The bracketed spiderwort is commonly found in the Black Hills at low to mid elevations in grasslands, meadows, and open pine forests, whereas the prairie spiderwort is found in rocky and sandy soils often extending to higher elevations (Larson and Johnson 1999:190). The former is located at Wind Cave National Park. Neither of these is identified in ethnobotanical sources, although the Lakotas are known to have used *T. reflexa.** The Lakota called spiderwort *canhlogan panpanla* [soft stalk] or *hanpi'natopi* [they use it to dye moccasins blue] (Buechel 1970:117, 167; Rogers 1980: 26). The flowers of this plant produce a blue, jelly-like paint that the Lakotas used to paint their moccasins (Buechel 1970:117). Melvin Gilmore (1919:70) tells of a Dakota love song, which young men sang when they found this flower in bloom. Although the Cherokees are reported to have prepared this plant for food (Kindscher 1987:219), there is no information on such use for the tribal nations who lived in the region of the Black Hills. Among the tribal nations who inhabited this region, only the Lakota are reported to have used the plant.

Convolvulaccae
The Morninglory Family

Two species from this family are found in the Black Hills, and both have names and/or uses reported in the ethnobotanical literatures on the tribal nations who lived in the area.

Convolvulvus arvensis
[field bindweed]

This is a frequent plant in the Black Hills, where it grows at low to mid elevations in a wide range of habitats, including those at Wind Cave National Park (Larson and Johnson 1999:190; Pisarowicz 2001k:1). Although this particular species is not identified in ethnobotanical sources, the related *C. sepium* [hedge bindweed]* is named by the Lakotas. It is called *kimimila tawanahca* [butterfly flower] or alternately *pstio'lahu iyececa* [like the arrowhead] (Buechel 1970: 307; Rogers 1980:43). Lame Deer (in Fire and Fire and Erdoes 1972:171), a Lakota medicine man, reports that it is used to make people vomit.

Ipomoea leptophylla
[bush morningglory]

Known for its large taproot, this plant is widely distributed in the high plains regions of the West (Johnson and Larson 1999:164).

Names:

Lakota (Buechel 1970:440; Rogers 1980:43)
pejuta nige tanka [big stomach medicine]

Plains Apache (Jordan 1965:112)
ciye.yedagol.^isi. [ghost throw at you]
alternate:*^ohcicize. ize* [grass bone medicine]

Habitat: This plant is largely restricted to the southern and eastern portions of the Black Hills, especially in the dry sandy grasslands at the south end of the Red Valley (Larson and Johnson 1999:192). Surprisingly it is not reported for Wind Cave National Park.

Use: Bush morninglory was used as an emergency food by many Plains Indian nations and also for medicinal purposes.

[food] Lakotas ate the root raw (Buechel 1970:440), and so did the Cheyennes, Arapahos, Pawnees, and Kiowas but mostly as an emergency food (Vestal and Schultes 1939:48; Kindscher 1987:136).

[medicinal] The scrapings from the root were eaten raw by the Lakotas to treat stomach ailments (Buechel 1970:440). Even though the Plains Apaches feared this plant, the root was chewed and used in treatments to relieve the pain that accompanied a broken bone or other injury (Jordan 1965: 112-113).

[fuel] The Lakotas used the roots as a fire starter. A fire was set in the roots and then these were wrapped and hung outside. The fire could last up to seven months (Buechel 1970:440). Lame Deer (in Fire and Fire and Erdoes 1972: 172) said about this plant,

> In the old days, before we had matches, when you lit this herb it would keep smoldering for months. It used to be hung up before the tipi. If you needed a fire you just blew on it until it glowed, then you hung it up again to smolder some more.

Cornaccae
The Dogwood Family

Cornus canadensis [bunchberry dogwood], also known as dwarf cornel, is located in the moist aspen, birch, and mixed coniferous forests at mid to high elevations in the northern and central regions of the Black Hills. Although there are no reports on its applications by tribal nations in this region, it was used as an antidote for certain poisons by tribes farther north (Larson and Johnson 1999:192). Modern herbalists also use it as an anti-inflammatory and analgesic (Tilford 1997:22).

Crassulaccae
The Stone Crop Family

Sedum lanceolatum [spearleaf stonecrop] is the only species reported for the Black Hills. It is found frequently throughout the Black Hills at all elevations in dry open pine forest or pine-juniper woodlands and grasslands (Larson and Johnson 1999:194). It grows at Wind Cave National Park in prairie habitats (Pisarowicz 2001h:2). There are tribal nations known to have used it to treat sore eyes and throats, but none of these lived historically in the region of the Black Hills. European Americans use the plant's mucilaginous juice to treat burns and other skin irritations (Tilford 1997:140).

Cucurbitaceae
The Cucurbit Family

A wide variety of wild and domesticated plants in the Cucurbit family were very important food staples in the diets of Plains Indians and also used for a variety of medicinal purposes. Some of them, including *Cucurbita foetidissima* [buffalo or Missouri gourd], are located in areas of Nebraska just south of the Black Hills. This plant was believed to have mystical powers, and its root was considered dangerous to pick (Kindscher 1987:106-107, 1992:76-79). The Lakotas call it *wagamun pejuta* [pumpkin medicine], the Poncas name it *niashiga makan* [human being medicine], and the Kiowas know it as *ko-kon-baw* [no translation given]. It had a variety of medicinal applications among the Poncas, Lakotas, and Kiowas. It was also used by the Kiowas to clean hides (Gilmore 1919: 116-

117; Vestal and Schultes 1939:54; Lewis, T. 1990:135).

Echinocystis lobata **[wild cucumber]**

Wild cucumber is the only *Curcubitaceae* species noted for the Black Hills (Larson and Johnson 1999:196), but it is not found at Wind Cave National Park.

Names:

Lakota (Gilmore 1919:129; Buechel 1970:519; Rogers 1980:44)
wahna hnahecha [it is a groaning thing]

Ponca (Gilmore 1919:129)
watangatha [ghost squash]

Habitat: This plant, which appears occasionally in the Black Hills, is found at low elevations near streams and other moist locations (Larson and Johnson 1999:194).

Uses: Only the Lakotas are known to have any applications for this plant.

[art & manufacture] The Lakotas are reported to have used the plant's seeds as beads (Gilmore 1919:129).

Euphorbiaceae **The Spurge Family**

A number of different spurge species are found in the central high plains, but only *Euphorbia esula* (leafy spurge) and *E.robusta/brachycera* [Rocky Mt. spurge/ horned spurge] are described in Larsen and Johnson's work (1999:196) on the Black Hills. At Wind Cave National Park, two species are reported, *Euphoriba/ Chamaesyce sticospora* [carpetweed/ small slimseed sandmat] and *Euphorbia esula* [leafy spurge /sandmat] (Pisarowicz 2001k:4). None of these plants have any documented uses. The Lakotas and the Poncas had medicinal uses, however, for *Croton texensis* [skunkweed/ Texas croton], *E/C.geyeri* [Geyer's spurge/ sand-mat], *E.marginata* [snow-on-the-mountain], *E/C. missurica* [prairie spurge/ sandmat], and *E/C.serpyllifolia* [thymeleaf spurge/ sandmat]. Snow-on-the-Mountain is found widely in southern South Dakota near prairie dog towns, road edges, and other disturbed areas (Johnson and Larson 1999: 166).

Names:

Kiowa (Vestal and Schultes 1939:36)
khaw-lo-dam-a [no translation given]
E. marginata
tai-me [Sun Dance weed]
Croton texensis

Lakota (Buechel 1970:117, 242, 437, 520; Rogers 1980:45)
asan' pi' peju ta [milk root]
E. marginata
alternate: *itopta sapa tapejuta* [Blackfooted ferret medicine]
apela tapislecala iyececa [leaves are shaped like a spleen]
E. missurica
canhlogan wapostan [stalk to cover the head]
E. geyeri
alternate: *paya pejuta* [head root]
wahpe hcahca [flower leaf]
Croton texensis

Ponca (Gilmore 1919:94)
naze ni pezhi [milk weed]
E. serpylliola

Habitat: None of the spurges used by tribal nations are reported for the Black Hills.

Uses: Various species of *Euphorbiaceae* were used largely for medicinal purposes by the tribes who lived in the region of the Black Hills.

[food] The Kiowas made a chewing gum from thymeleaf spurge (Vestal and Schultes 1939:36-37).

[medicinal] The Lakotas called Geyer's spurge "head root" because it was used as a protection for the head (Buechel 1970:117, 437; Lame Deer in Fire and Erdoes 1972: 171). The Lakotas also applied the crushed leaves of snow-on-the-mountain for a lini-

ment to treat swellings, and they used them in a tea to promote milk production in nursing mothers (Buechel 1970:242). The Poncas used this as a remedy to increase milk production in nursing mothers, and it was employed to treat dysentery and abdominal bloating in children (Gilmore 1919: 94). The Lakotas brewed skunkweed leaves in a tea for stomach pains (Buechel 1970: 520). Spurges were also commonly used in European American folk medicine (Kindscher 1992: 110-11).

[symbolic & ceremonial] The Kiowas claimed that they received their knowledge of skunkweed from the Crows in the 18th century, and that they once used it in their Sun Dance (Vestal and Schultes 1939:36).

Fabaccae
The Legume Family

This was one of the most significant plant families for Plains Indians because it contained many important food staples. Indeed, most of the plants from this family that are located in the Black Hills had food, medicinal, or other uses among the tribal nations who occupied the area.

Amphicarpaea bracteata
[hogpeanut]

Hogpeanut seeds were a very important food delicacy for tribal nations in the region. The plant was very abundant along the Missouri River and its tributaries. The Platte River was also a good site for this member of the legume family (Kindscher 1987:37-40; Larson and Johnson 1999:200).

Names:

Lakota (Buechel 1970:330, 394; Rogers 1980:45)
maka'tomnicha [ground beans]

Ponca (Gilmore 1919:95)
Hinbthi-abe [beans]

Habitat: This plant is uncommon in the Black Hills, restricted largely to the moist understory of hardwood drainages in low to mid elevation locations of the central and eastern parts of the region (Larson and Johnson 1999:200).

Uses: Hogpeanuts were primarily a source of food, although the Lakotas used the plant's leaves for medicinal purposes.

[food] The women of the Ponca, Omaha, and Lakota tribes were known to gather the fleshy underground pods from the caches of field mice or voles (Denig in Denig in Ewers 1961:11; Standing Bear 1978:57). Dakota (and presumably Lakota) women, however, left gifts of corn or other acceptable foods in exchange (Gilmore 1919:96). The underground seeds were gathered in early spring and late fall, while the aboveground seeds were collected only during the fall (Kindscher 1987:38). The beans were eaten raw or boiled with meat fat to make a soup, and the smaller lentil-sized seeds from the aboveground pods were cooked (Gilmore 1919:96 Ewers 1961:11; Kindscher 1987: 38-41).

[medicinal] Lakotas added the pulverized leaves of the hog peanut to salves for the treatment of swellings (Buechel 1970:394).

[symbolic & ceremonial] Melvin Gilmore (1925:183-184) relates a moral story about a woman who took beans from a mouse's storehouse without returning a gift and the calamity that befell her community as a result.

Apios americana
[groundnut]

The groundnut or wild potato was another important food source for local tribes, but this legume plant is located primarily in regions east of the Black Hills (Kindscher 1987:46-53). Larson and Johnson do not even mention it in their extensive listing of plants for the Hills. The Cheyennes called it

aestome-mesehestotse [tasteless potato], and they probably ate the tubers (Hart 1981:28). The Lakotas called it *blo* [potato] (Buechel 1970:111) and included it in their diets.

***Astragalus* spp. [milkvetch]**

Milkvetches form one of the most diverse groups in the legume family with many different varieties found in the Black Hills and surrounding regions (Larson and Johnson 1999:200). Many milkvetches contain substances toxic to humans and animals (Kindscher 1992:66-67). Others were used as food and medicine by tribes in the region, although known native names are not always unambiguously linked to specific botanical species.

Names:

Cheyenne (Grinnell 1972:2:179; Hart 1981:28)
ma?xe-heoovo?estse [big scabby weed plant]
A. crassicarpus
mahk ha' nowas [poison weed medicine]
A. adsurgens

Lakota (Densmore 1918:257, 260; Gilmore 1913b: 365; Buechel 1970:440, 469; Rogers 1981: 45-46; Lewis, T. 1990:134)
cante yazanpi icuwa [heart pain treatment]
unidentified milkvetch variety
locipisni pezijota [grey appetite herb]
A. carolinianus
peju'ta ska hu [white stem medicine]
A. canadensis or *A. racemosus*
alternate: *peju'ta zi* [yellow root]
peju'ta skuya [sweet medicine]
A. gracilis
pteta tawote [buffalo food]
A. crassicarpus
sunkle' ja hu [horse urine stem]
A. racemosus
alternate: *sunkleja* [horse urine]
sunko wasakala [easy to get for horse]
A. canadensis
tasusu canhlogan [small bean weed]
A. ceramicus [painted milkvetch]

Ponca (Gilmore 1919:91)
gansatho [rattle]
A. carolinianus
tdika shande [no translations given]
A. crassicarpus
alternate: *wamide wengithe*

Habitat: *A.adsurgens* is widespread in the Black Hills and found in many different habitats from open pines to grasslands at low to high elevations (Larson and Johnson 1999:200). *A.agrestis* is a low to mid elevation plant of the grasslands and meadows, while *A.alpinas* is found at mid to high elevations in the meadows and open pine or mixed deciduous forests in the central and northern Black Hills (Larson and Johnson 1999:202). *A.americanus, A.candensis* and *A.australis* are also found in the central and northern Black Hills at mid to high elevations. *A.crassicarpus*is frequently found throughout the Hills in a wide range of habitats, including in Wind Cave National Park (Pisarowicz 2001j:1). *A.flexuosus* is frequent in similar environments, but its distribution is restricted to the central and northern Hills. *A.gilviflorus* and *A.gracilis* are common at low to mid elevations in dry grasslands especially in the Red Valley and Hogback (Larson and Johnson 1999:206). One additional species is reported at Wind Cave National Park: *A.bisculcatus* [biscuit milkvetch].

Uses. While *A.crassicarpus* was an important food staple for many tribal nations in the region, most of the other milkvetch species were used for medicinal and veterinary purposes.

[food] The Lakotas and Poncas were known to collect and eat fresh groundplum (Gilmore 1913b:365; Gilmore 1919:91; Buechel 1970:440). The immature pods were gathered in the spring and eaten raw or cooked (Kindscher 1987:61).

[medicinal] The Lakotas used many different *Astragalus* species for medicinal purposes. *A.carolinianus* was a febrifuge for children and also employed to treat loss of appetite (Densmore 1918:257; Gilmore 1919:91). The pulverized roots of *A. canadensis* or *racemosus* were chewed for heart and back pain, to relieve coughing, and to promote urination (Buechel 1970:440; Rogers 1980:45; Lewis, T. 1990:134). Both were also used in an infusion to lower fevers

in children (Gilmore 1913b, 365). Lakota women chewed on *A.gracilis* to promote milk production (Buechel 1970:440). Another unidentified milkvetch, known as *cante yazanpi icuwa*, was an ingredient in a tea for stomach and heart pain (Densmore 1918: 260; Lame Deer in Fire and Erdoes 1972: 170).

The Cheyennes powdered the leaves and stems of *A.adsurgens* and sprinkled them on parts of the body afflicted by poison ivy and other plant toxins (Grinnell 1972:2: 179).

The Arikaras were also reported to use milkvetches for medicinal purposes, although the native names and specific botanical varieties have not been identified (Kindscher 1992:66).

[veterinary] Lakotas fed the seeds of *A. canadensis* to their horses (Buechel 1970: 469). The Cheyennes applied *A.crassicarpus* as an ointment to treat horses suffering from difficulty urinating (Hart 1981: 28), and the Lakotas used this plant as a medicinal preparation for horses too (Buechel 1970: 440).

[symbolic & ceremonial] Cheyenne snake dancers used *A.crassicarpus* for unidentified ceremonial purposes (Hart 1981:28).

[art & manufacture] The Poncas used the seeds of *A.crassicarpus* in children's rattles, and they wove the leaves into mats for butchering meat (Gilmore 1919:91).

Dalea **spp.**
[prairie clover]

The tribes of the northern Plains used several different species of prairie clover, including *Dalea aurea* [golden prairie clover], *D.candida* [white prairie clover], *D. enneandra* [slender prairie clover], *D.purpurea* [purple prairie clover], and *D.Villosa* [silky prairie clover].

Names:

Comanche (Carlson and Jones 1939:523)
pake:tse [no translation given]

Lakota (Gilmore 1919:94; Buechel 1970:110,117, 128, 172, 178, 495, 519; Rogers 1980:46, 47)
canhlogan suta [tough weed]
D. enneandra
alternate: *hehaka tapejuta* [elk medicine]
toka'la tapejuta hu bloka [male kit-fox medicine stem]
D. candida
alternate: *hitunkala tawoyute* [mouse food]
tokala tapejuta hu winyela [female kit-fox medicine stem]
D. purpurea
Bla ye zitka'tacan hu stola [small stem for bird to sit on]
D. villiosa
alternates: *casmu'huholhota* [gray sand stem]
waptaya huholhota [grey wood stem]
wahcai kanta mna unma'hu'tanka [other yellow flower with big stem that smells like plum]
D. aurea
wanahcha [cultivated flower]

Ponca (Gilmore 1919:94)
makan skithe [sweet medicine]

Habitat: The white prairie clover appears frequently in the Black Hills from low to mid elevations especially in open pine forest and grasslands, while the purple variety is even more widely distributed extending into sagebrush steppe, mixed grass prairie, and meadow habitats (Larson and Johnson 1999: 212-14). The other three varieties with reputed uses among local tribes, *D.aurelia, D. enneandra*, and *D.villosa*, are not mentioned in Larson and Johnson's botanical survey of the Hills, although these are found in the adjacent prairies (Johnson and Larson 1999:178-180). *D.Aurelia, D.enneandra*, and *D.purpurea*, however, appear at Wind Cave National Park (Pisarowicz 2001h:1).

Uses: *Dalea* species were used for both food and medicine by the tribal nations of the region.

[food] Many tribes, including the Poncas, Lakotas, and Comanches, chewed the roots

of the white and pink varieties as a gum (Gilmore 1919:94; Carlson and Jones 1939: 523; Buechel 1970:495; Bordeaux 1929: 131; Kindscher 1987:111). The Lakotas also used them to make a pleasant beverage tea (Gilmore 1919:94).

[medicinal] The Lakotas used the roots of *D.villiosa* as a purge, and its leaves and blossoms were taken to cure a sore throat (Buechel 1970:110, 549). *D.enneandra* was included in Lakota treatments for dysentery and intestinal ailments (Gilmore 1913b: 366), while the Plains Apaches burned it as a moxa for headaches, rheumatism, and pneumonia (Jordan 1965: 109). The Lakotas also took *D.purpura* as a medicine for unidentified maladies (Densmore 1918:271).

Desmodium Canadense **[Canada tickclover or showy ticktrefoil]**

Also known as ticktrefoil, this plant is restricted to the moist meadows and steam banks in the central Black Hills (Larson and Johnson 1999:214). The Lakotas identified this plant with three different names: *hante pepe'iyeca* [like a prickly juniper], *wahpe-'inkpa pepe* [prickly leaf ends], and *wokahtan blaskaska* [small flat burs that stick to clothing] (Buechel 1970:520, 601; Rogers 1980:46). No uses have been reported for this plant, however.

Glycyrrhiza lepidota **[American licorice]**

This is another plant that is common and widely distributed throughout the western United States in prairies and pastures. It is also one that has a scientifically documented medicinal value (Kindscher 1992:116-117).

Names:

Cheyenne (Grinnell 1972:2:178; Hart 1981:28)
haht'nowasspoph [yellow-jacket stinger plant]
alternate: *ma?kehaha-novaso*

Lakota (Buechel 1970:587; Rogers 1980:46)
winawizi cik'ala [little jealous woman]
*Gilmore (1919:92) writes that the name derives from the word for jealous woman and refers to the burr which ' take hold of a man.

Habitat This plant appears frequently over the entire Black Hills on stream banks, floodplains, and meadows at low to mid elevations (Larson and Johnson 1999:216). It is located at Wind Cave National Park (Pisarowicz 2001j:1).

Uses: Licorice was used for food and many other purposes by tribal nations in the region.

[food] The roots were an important food in the diets of tribes in the northern Plains (Kindscher1987:120-21). Lakotas peeled and dried large quantities for winter use (Gilmore 1919:92), while Cheyennes ate the young shoots of the licorice plant raw when they budded in early spring (Grinnell 1972: 2:178).

[medicinal] The Lakotas mixed the root with *pejuta ska* in a treatment for the flu (Buechel 1970:587; Lame Deer in Fire and Erdoes 1972:170), and they also used it as a remedy for toothaches, earaches, and other ailments (Densmore 1918:263; Gilmore 1913b:365;1919:92). The leaves were steeped for earache treatments, and a decoction of the root was employed for treating fever in children (Gilmore 1919:92). The Cheyennes relied on the dried leaves and the dried roots to make a medicinal tea for stomachaches and diarrhea (Hart 1981:28-29; 1992:35). The Arapahos treated sore throats with the root of the wild licorice (Nickerson 1966: 48). This plant was also employed as a folk remedy for a variety of ailments in European American folk medicine (Kindscher 1992: 115; Tilford 1997:90).

[veterinary] The Lakotas made a poultice out of licorice as a remedy for a horse's sore back (Gilmore 1919:92).

[art & manufacture] Lakota men used the burrs of this plant to hold their hair back when shooting bows (Red Cloud High School 2001).

[symbolic & ceremonial] The Cheyennes chewed the roots for their cooling effect during sweatlodges and the Sun Dance (Hart 1919:92).

Hedysarum alpinum **[alpine sweetvetch]**

Frequently found in the mid to high elevation meadows and forests in the central and northern Black Hills, Alpine sweetvetch is used by tribes farther north, but it is not associated with any name or application among local tribal nations (Larson and Johnson 1999:216-217).

Lathyrus ochroleucus **[cream pea or vetchling]**

This is another plant of the northern and central Black Hills found in dense forest environments. It is not known to have any names or uses for the tribes who lived in the region (Larson and Johnson 1999:218). The Poncas, however, used *L.polymorphus* [manystem pea] as a source of food and called it *hinbthi-si-tanga* [large seeded bean] (Gilmore 1919:96).

Lupinus argenteus **[ailvery lupine]**

Silvery lupine is common from the northern to the central Hills, and it is abundant on the western side of the Hills. It appears from low to high elevations in meadows and open forests (Larson and Johnson 1999:218), and it is found at Wind Cave National Park (Pisarowicz 2001j:1). The Lakotas call a related species, *L. pusillus* [low or rusty lupine], *canhlogan nablaga* [burst open weed] (Buechel 1970:117; Rogers 1980:46).

Medicago lupulina **[black medic]**

This plant was introduced from Eurasia, and it has become very common in the Black Hills in a wide range of environments at all elevations (Larson and Johnson 1999:220). It is reported at Wind Cave National Park. No names or uses for it have been documented in the ethnobotanical literature.

Melilotus **spp. [sweetclover]**

M.alba [white sweetclover] and *M. officinalis* [yellow sweetclover] were introduced by European Americans, and both spread rapidly across the plains where they commonly appear along roadsides, in rangelands, and fields (Johnson and Larson 1999: 186). Yellow sweetclover is common in the Black Hills in a wide range of environments from low to mid elevations. White sweetclover is also present but not as common (Larson and Johnson 1999:220). Both are present at Wind Cave National Park. The Lakotas call white sweet clover *wachanga iyechecha* [like sweetgrass] (Gilmore 1919: 91). The Poncas and Dakota quickly adapted the sweetclover because its pleasant scent reminded them of sweetgrass. They hung it in their homes as an air freshner (Ibid.) Yellow sweetclover was named *wahpe swula* [fine leaf] (Gilmore 1913b: 365; Buechel 1970:520; Rogers 1980:47), but no use for it has been reported.

Oxytropis **spp. [crazyweeds or locoweeds]**

Also known as locoweeds, these species are well known for their ability to intoxicate horses (Larson and Johnson 1999:222). The varieties reported for the Black Hills include *O.campestris* [slender crazyweed or locoweed], *O.lamberti* [Lambert/purple crazyweed], and *O.sericea* [white crazyweed] (Larson and Johnson 1999:222-223).

Names:

Cheyenne (Grinnell 1972:2:179)
wi'ke isse e yo [sweet root] applies to *O. sericea*
alternate: *ve?ohke-heseeo?otse* [bitter medicine]

Lakota (Buechel 1970:470; Rogers 1980:47)
sunkta peju'ta [horse root]
O. lamberti

Habitat: The Slender crazyweed is common throughout the Black Hills from mid to high elevations and in a variety of different habitats, while the Lambert and white crazyweed species are found at low to mid elevation ranges. The Lambert crazyweed is frequent in the Hills, particularly in the Hogback and Red Valley, and the white crazyweed is seen occasionally in mixed grass prairies, sagebrush steppes, and open pine forests (Larson and Johnson 1999:222-223). Both species are reported at Wind Cave National Park (Pisarowicz 2001h:1).

Uses: In the Black Hills area, only the Cheyennes and Lakotas are reported to have had any use for crazyweeds.

[medicinal] Although other tribal nations in the West used crazyweeds for various medicinal purposes (Kindscher 1992:265-67), the Cheyennes are the only nation with an historical connection to the Black Hills that employed it medicinally. They used the powdered root of *O. sericea* and mixed it with their "blue medicine" [Sheperd's purse] to increase the milk flow of a nursing mother (Grinnell 1972:2:179).

[veterinary] The Lakotas report that horses eat and even dig out the roots of the *O. lamberti* variety of crazyweed (Buechel 1970:47).

Psoralea spp. [scurfpea]

This was a very significant group of legumes for the tribal nations of the Plains. One of its species, *esculenta,* served as a major source of food, but many others were used for a wide range of benefits too.

Psoralea argophyllum [silverleaf Indian scrufpea]

Like many other members of the scrufpea family, *argophylla* is widely distributed in the prairies and plains of the United States (Kaye, Berry and Moodie 1978:329-336; Kindscher 1992:176; Johnson and Larson 1999:188).

Names:

Cheyenne (Grinnell 1972:2:178; Hart 1981:29; Whiteman in Schwartz 1988: 53)
to' wan i yuhk ts [ingredients to cool]
alternates: *hestamoa?ano* [devil's turnip]
he?ka?evo?e-mota?eno
hestamokan

Lakota (Buechel 1970:487; Rogers 1980:47)
ticanicahu [curlew's plant]
alternate: *ticanicahu hlohota* [grey curlew's plant]

Habitat: Silver scrufpea is found over the entire region of the Black Hills at low to mid elevations. This plant grows in the mixed grass prairie, sagebrush steppe, meadows, and open pine forest of the Hogback, Red Valley, and Gray Shale Foothills (Larson and Johnson 1999:224). It is found at Wind Cave National Park too (Pisarowicz 2001h: 1).

Uses: The Cheyennes and Lakotas are the only two populations from the Black Hills for which names and specific applications for this plant are recorded, although other tribes in the northern Plains are known to have made use of it (Kindscher 1992:176-177).

[medicine] The Lakotas used it as a medicine but for an unknown therapeutic purpose (Buechel 1970:487). Cheyennes applied it as a febrifuge in two ways. In one, the leaves and stems were ground fine and boiled as a tea. In the other, the leaves and stem were

ground to powder and mixed with grease to rub on the body (Grinnell 1972:2:178).

[veterinary] The Lakotas used the root as a stimulant for their horses (Buechel 1970: 487; Red Shirt 2002:9).

[art & manufacture] The Lakotas and the Cheyennes used the tough green stems of this plant to weave baskets for transporting meat (Buechel 1970:487; Whiteman in Schwartz 1988:53). This may have been the plant on which Lakotas butchered buffalo meat, when they put on demonstrations at the park in 1937 (Freeland 1938:4).

[symbolic & ceremonial] The Cheyennes have a story about how this plant could lead young girls astray while they were looking for breadroot (Hart 1981:21).

Psoralea aurea
[golden scurfpea]*

This scurfpea is not reported for the Black Hills. The Lakotas called it *pejuta pa* [bitter medicine], and they prepared a decoction of the leaves for colic and dysentery (Gilmore 1919:94; Buechel 1970:519).

Psoralea cuspidate
[tall breadroot scurfpea]

Although this scurfpea is not reported for the Black Hills, it is abundant on gravelly uplands, hilltops, and slopes in south central and southwestern South Dakota and adjoining areas of Wyoming and Montana (Johnson and Larson 1999:188). Lakotas call it *mato' tatinpsila* [bear's turnip], and they say that it has the same qualities as *aunyeyapi* or sandcherries, which I suspect means that one must approach it from opposite the windward side. It is used as a medicine, the purpose of which is undisclosed (Buechel 1970:334; Rogers 1980:47). The Plains Apaches regarded this plant as unpalatable and saw it as a "mate" to *P.esculenta* (Jordan 1965:47).

Psoralea esculenta
[breadroot scurfpea]

Historically, this was one of the most important foods for the tribal nations of the northern Plains, and it is one of the most commonly reported as well (Kindscher 1987:183-189). Notwithstanding its importance, this is not an easy plant to harvest because its roots are generally compacted in hard soil. Historically, women used specially carved digging sticks to pry the turnips from the ground, and today, Lakota and Cheyenne women often use crowbars to do the job (Albers 1966-1976; Hart 1981: 29). Also, because the plant's top breaks off and scatters its seeds soon after ripening, it is difficult to identify once this happens (Kindscher 1987:184-185). As a result, the window of opportunity for identifying and digging these tubers is limited. Melvin Gilmore (1919:92-93) notes that Lakota mothers told their children to take note of the direction in which the plants point and follow these to find other plants because it is said that the plants 'point to each other.'

Names:

Cheyenne (Grinnell 1972:2:178; Hart 1981:29)
mohk' ta en' [black face]
alternate: *mo?ohta?eno*

Lakota (Buechel 1970:489; Rogers 1980:48)
ti'psila [no translation given]

Plains Apache (Jordan 1965:46)
^o^a. [no translation provided]

Ponca (Gilmore 1919:92)
nugthe [no translation given]

Habitat: This important source of food is abundant, and it appears over the entire Black Hills and at Wind Cave National Park from low to mid elevations in mixed grass prairie and open pine forests (Larson and Johnson 1999:226).

Uses: Although one of the most important sources of food and carbohydrates for Plains

populations, wild turnip had other functions too.

[food] This is still a very important root to the Cheyennes and Lakotas who gather it in early summer, usually in the month of June. Historically, the root was dried, braided, and stored for winter use. It was often boiled with meat and sometimes used with a sweetener for pudding (Gilmore 1919:92; Bordeaux 1929:129; Hassrick 1964:178-179; Grinnell 1972:2:178; Standing Bear 1978: 57, 1988:111; Hart 1981:29-30). It is still gathered today by women and men, and it is an important ingredient in soups served on ceremonial occasions (Albers 1966-1976; Lewis, T 1990:59). This was considered the most important root crop for the Plains Apaches, and it has remained so in post-reservation times (Jordan 1965:46). Hidatsa women pounded the roots to a fine powder, which was used as a flour to thicken soups and puddings (Nickel 1974:72). The Arikaras and Hidatsas frequently acquired their supplies of breadroot in trade with the Lakotas, Apaches, and other tribal nations who lived on the high plains near their villages (Gilmore 1926:14; Jordan 1965:47; Nickel 1974:72).

[medicinal] The Cheyennes used it as an ingredient in various decoctions, including one for healing burns and another for treating diarrhea (Hart 1981:29).

[symbolic & ceremonial] This plant occupied such an important place that it found its way into many important stories in the oral traditions of the tribal nations in the region (Gilmore 1919:93), including the Fallen Star story cycle. Among the Plains Apaches, it appears in one of their origin stories (Jordan 1965:47). It was also one of the ceremonial foods served at the Cheyenne's Animal Dance or *Massaum* (Hart 1981:29).

Psoralea hypogeaum **[subterranean Indian breadfruit]**

This is another scurfpea not reported in the Black Hills. The Cheyennes called it *ma im mohk' ta' en* [red and black face], and they ate it fresh or dried it for winter use (Grinnell 1972:2:178). The Comanches, who ate the roots raw, knew it as *e'kakoni* [no translation given] (Carlson and Jones 1939: 523).

Psoralea lanceolata **[lemon scurfpea]**

Although not located in the Black Hills, this scurfpea is found in sandy habitats in western South Dakota and in neighboring Wyoming (Johnson and Larson 1999:192). The Lakotas named it *canhlogan hutkan hanska* [tall root stem/our translation] (Buechel 1970:116; Rogers 1980:48), but there are no reports that they used it. The Arapahos, on the other hand, chewed the roots to reduce hoarseness, used the leaves to moisturize the skin, and brewed a tea from the flower's head to treat headaches (Nickerson 1966: 48).

Psoralea tenuiflora **[slimflower scurfpea]**

Also called few-flowered psoralea, this scurfpea is widely distributed in the United States, extending from Kentucky in the east to Arizona in the southwest (Larson and Johnson 1999:226).

Names:

Kiowa (Vestal and Schultes 1939:34)
fu-yan-tzon

Lakota (Buechel 1970:487, 521; Rogers 1980:48)
ticanicahu tanka [large curlew's plant]
alternate: *wahpo'kijata* [branched leaf]

Habitat: Slimflower scurfpeas are found mostly at low elevations in the Red Valley and Hogback regions of the central and

southern Black Hills (Larson and Johnson 1999:226). Surprisingly, it is not listed at Wind Cave National Park.

Uses: This variety of scurfpea was used medicinally, and it had hygienic and manufacturing applications as well.

[medicinal] The Lakotas prepared treatments for headaches from its root, and they also combined the roots with other unidentified plants in a remedy to treat consumption (Gilmore 1919:93; Buechel 1970:487). Garlands were made from the tops of the plant to protect the head from the heat of the sun (Gilmore 1919:93).

[cosmetic & hygienic] A smudge was prepared by the Lakotas from the plant's root to use as a mosquito repellent (Buechel 1970: 487).

[art & manufacture] The Plains Apaches employed a section of the plant's lower stem as a scoop to remove marrow from long animal bones (Jordan 1965:75), and the Kiowas used it as a fork to eat buffalo steak (Vestal and Schultes 1939:34).

Thermopsis rhombifolia
[goldenpea]

Also known as prairie thermopsis, buckbean, yellow bean, or false lupine, it is widely distributed in the high plains regions of the West (Johnson and Larson 1999:192). In the Black Hills, it is common at all elevations and in a range of habitats (Larson and Johnson 1999:226). It is also reported at Wind Cave National Park. Melvin Gilmore (1919:91) learned that this plant was dried to use in a smoke treatment for rheumatism, although he does not identify the tribal origin of this practice. The Cheyennes used it in a similar manner, and they also brewed a medicinal tea from it (Hart 1981:30).

***Trifolium* spp.**
[clovers]

T. hybridum [alsike clover], *T. pratense* [red clover], and *T. repens* [white clover] were all introduced to North America from Europe for animal forage. They are frequent from low to high elevations in all kinds of domesticated and disturbed environments in the Black Hills (Larson and Johnson 1999: 228-30), but they are not listed among the plants at Wind Cave National Park. European Americans made tea from dried red clover flowers as a blood purifier and for coughs, skin problems, liver and gall bladder disorders (Tilford 1997:124). There is no documentation of their names and uses in ethnobotanical sources on the tribal nations who were associated historically with the Hills.

Vicia Americana
[American vetch]

The Lakotas refer to this plant as *tasusu* [buffalo testicles] (Buechel 1970:482), but no uses have been reported for it. It is found throughout the Hills in a wide range of low to high elevation environments (Larson and Johnson 1999: 232), and it also grows at Wind Cave National park (Pisarowicz 2001j:1).

Fumariaceae
Fumitory Family

Only one species of this family, the *Corydalis aurea* [scrambled eggs], is reported for the Black Hills, and it is not associated with any names or uses in the ethnobotanical literatures on European American or American Indian populations in the region. It is found occasionally in the Hills in moist and shady locations in pine forests and deciduous woodlands at low to high elevations (Larson and Johnson 1999:231).

Gentianacae
Gentian Family

Of the gentian species reported for the Black Hills, only three are identified by name in the botanical nomenclatures of local tribal nations, and of these, two, *Gentiana Andrewsii* [closed bottle gentian] and *G. puberulenta* [downy gentian], are also commonly found in neighboring grassland habitats (Johnson and Larson 1999:196).

Names:

Cheyenne (Grinnell 1972:2:184; Hart 1981:26)
e kon i mohk ta' en (hard black face)
Frasera speciosa [elkweed]
alternate: *he?kone-mo?kohta?ene* [strong turnip]

Lakota (Gilmore 1919:109; Buechel 1970:287, 519; Rogers 1980:49)
pejuta zi [yellow root]
G. puberulenta
wahca' waste [good flower]
G. andrewsii
alternate: *kapo'papi* [makes popping noise]

Habitat: *Frasera speciosa* [elkweed] is common to occasional in the northern and western portions of the Black Hills where it is found on the Limestone Plateau in open pine and aspen forest, while *Gentiana affinis* [northern gentian] is located in the same area but in moist locations at low to mid elevations (Larson and Johnson 1999:234). On the eastern side of the Hills, *G.Andrewsii* [closed gentian] is uncommon and found at low to mid elevations in moist meadow or stream bank environments, while *G. puberulenta* [gowney gentian] is rare and confined to sites in Pennington County (Larson and Johnson 1999:234, 236). Also present and frequent in the Black Hills at mid to high elevations is the Dwarf gentian, *G.amarella*, which grows in moist meadows and clearings, and the Spurred gentian, *Halenia deflexus*, which is found in moist forests and ravines (Larson and Johnson 1999:236, 238).

Uses: Elkweed and downy gentian are the only two gentian species for which there are reported uses in the botanical literatures on the tribes who occupied the Black Hills. No uses were reported for the other two species identified in Lakota nomenclatures.

[medicinal] The leaves of the showy frasera were dried and pulverized by the Cheyennes to make an infusion for diarrhea (Grinnell 1972:2:184). The Arapahos used it for unidentified medicinal purposes (Nickerson 1966:49). The Dakotas (and possibly the Lakotas) made a root tea from the downey gentian for a tonic and also combined it with other medicines (Gilmore 1919:109).

[art & manufacture] The Arapahos used the large stems of showy frasera to make an elk-calling whistle (Nickerson 1966:49).

Geraniaceae
The Geranium Family

Only one native species in this family, *Geranium richardsonii* [Richardson's Geranium], is reported in the Black Hills, and it appears in the northern and central Black Hills at mid to high elevations along stream margins and in moist meadows (Larson and Johnson 1999:238). Only the Cheyennes are reported to have named and used this plant. They called it by several names: *mat' o min is to' a* [nose bleed medicine], or alternatively *matomene-vo-?estse* or *matomene-hesee-o?otse* (Grinnell 1972:2:179-80; Hart 1981: 26). The Cheyennes made a medicine from the pulverized leaf, which was rubbed on the nose or powdered and sniffed. The dried roots of this plant were also powdered and administered in a liquid infusion (Grinnell 1972:2:180). European American herbalists employ this and other *Geranium* species to treat diarrhea and other intestinal irritations (Tilford 1997:43).

Iridaceae
The Iris Family

Two species, *Iris Missouriensis* [Rocky Mountain iris] and *Sisyrinchium Montanum* [mountain blue-eyed grass], are reported in the Black Hills, and although both are common in the Hills and the surrounding plains, neither have been named or described in any of the ethnobotanical sources for the tribal nations who inhabited the region (Larson and Johnson 1999:240). The Rocky Mountain Iris or Western blue flag is reported at Wind Cave National Park (Pisarowicz 2001j:1).

Lamiaceae
The Mint Family

Of the eleven species from this family reported in the Black Hills, five of them can be identified with names in tribal nomenclatures and four are associated with important cultural uses. Indeed, two of the species in this family had significant medicinal and ceremonial functions. The Lakotas also named and identified two other species not reported in the Black Hills, *Phsostegia virginiana* [false dragonhead],* which they called *wahpe yatapi iyeca* [it is like lavender hyssop], and *Pyncanthemum virginianum* [mountain mint], which they called *i wahpe ceyaka* [mint leaf]. From the leaves of the mountain mint, they made a medicinal tea for coughing (Buechel 1970:520, 521; Rogers 1980:50).

Agastache foeniculum
[lavender hyssop]

This plant is largely restricted to, but widely distributed in, the northern Plains and western Great Lakes regions (Kindscher 1992:224-25), and along with its western relative, *Agastache urticifolia* [nettleleaf giant hyssop/horsemint], it was used by several tribal nations in the region.

Names:

Cheyenne (Grinnell 1972:2:186; Hart 1981:27)
mo e' emohk'shin [elk mint]
alternate: *mo?ehe-moxesheene*

Lakota (Buechel 1970:521; Rogers 1980:49)
wahpe'yata'pi [chewing leaf]

Habitat: Lavender hyssop is found occasionally in moist meadows and thickets or open forests and woodlands near streams at low to high elevations in the central and northern Black Hills (Larson and Johnson 1999:242).

Uses: Three of the tribal nations with known historical associations to the Black Hills used this plant for food, medicine, and hygiene.

[food] The Cheyennes, Hidatsas, and Lakotas boiled the leaves of the lavender hyssop for a beverage (Buechel 1970:521; Grinnell 1972:2:186; Nickel 1974:58). Other tribes in the region are reported to have used the related species *A.anethiodora* [giant hyssop] as a culinary sweetener (Gilmore 1919:113).

[medicinal] An infusion made from the hyssop was used by the Cheyennes to treat a weak heart and sore lungs (Grinnell 1972: 2:186), and it was also a remedy for colds and fevers (Hart 1981:27). Modern herbalists rely on it for its carminative, sedative, and diaphoretic properties (Tilford 1997: 102).

[cosmetic & hygienic] Hidatsas attached the leaves of the lavender hyssop to their fans because they gave off a fragrant odor (Nickel 1974:58).

Dracocephalum parviflorum
[American dragonhead]

The American Dragonhead is restricted in its distribution to the northern and central portions of the Black Hills where it appears occasionally. No names or uses have been

reported for this plant in ethnobotanical sources (Larson and Johnson 1999:242).

Hedeoma drummodi **[false penny royal]**

For more information, see *Salvia reflexa.*

Lycopus americanus **[American bugleweed]**

Also known as "water horehound," this plant is common and found along the margins of water habitats at low to mid elevations throughout the entire Black Hills. The tubers are edible. While European Americans and tribal nations outside the region are known to have used this bugleweed (Kindscher 1987:87; Tilford 1997:22), nothing has been reported for those who occupied the Black Hills in historic times. And of these nations, only the Lakotas are known to have had a name for this plant, *skiskita hu* [rough stem] (Buechel 1970:464; Rogers 1980:49).

Mentha Arvensis **[field mint]**

Field mint is ubiquitously present in the northern Plains where it is typically found along stream banks and at the margins of lakes and sloughs. It is widely used by European Americans and the tribal nations of the region for culinary and medicinal purposes (Kindscher 1992:152-155).

Names:

Arapaho (Nickerson 1966:50)
paquanah [no translation]

Cheyenne (Grinnell 1972:2:186; Hart 1981:27)
mahpe'-moxe'shene [water mint or perfume]
alternate: *he heyuts'tsihiss'ots* [vomiting medicine]

Lakota (Buechel 1970:131, 799; Rogers 1980:49)
ceya'ka [mint] is used in reference to the leaves
can peju'ta cik'ala [small wood medicine]
*applies to the roots only

Ponca (Gilmore 1919:112)
Pezhe nubthon [fragrant herb]

Habitat: Mint is ubiquitous in the Black Hills, and it is found at all elevations in moist locations especially along stream banks and lakeshores (Larson and Johnson 1999:244). It grows at Wind Cave National Park (Pisarowicz 2001j:2).

Uses: All of the tribal nations who occupied the Black Hills in historic times have reported uses for this important plant.

[food] The Cheyennes, Lakotas, and Poncas boiled the dried leaves for a culinary tea (Gilmore 1919:112; Bordeaux 1929: 129; Standing Bear 1978:58; Hart 1981: 27). This tea is still served today at Lakota feasts and other ceremonial occasions (Albers 1966-1978; Nurge 1970:67, 82). The Dakota (and possibly the Lakotas) flavored their cooked meat with mint and packed the plant with their dried meat too (Gilmore 1913b:363, 1919:112).

[medicinal] The Kiowas chewed the fresh leaves or brewed a tea to treat stomach ailments (Vestal and Schultes 1939:49). The Lakotas made a tea from the roots to treat headaches (Buechel 1970:799), swellings (Lewis, T. 1990:134), and abdominal pain (Suka sni win n.d:15; Lame Deer in Fire and Erdoes 1972:170), while the Cheyennes used the leaves and stems in a tea to induce vomiting and to strengthen the heart and stimulate other vital organs. The Cheyennes also believed it could function as an aphrodisiac (Grinnell 1972:2:186; Hart 1981:27). The Hidatsas made a medicinal tea for unidentified purposes (Nickel 1974: 67). Mint has a long history of use in European American folk medicine, and it is one of the most popular herbal teas in the United States today (Kindscher 1992:153-54).

[cosmetic & hygienic] Several tribes also used it to deodorize the body and to freshen the air in their living quarters (Grinnell 1972:2:186; Hart1981:27-28,1992:64; Kindscher 1992:153-54). The Cheyennes made

hair pomade by boiling dog meat with mint (Hart 1981:28).

[symbolic & ceremonial] A bed of mint was used in the Cheyenne Sun Dance for its cooling effects (Hart 1981:28).

Monarda fistulosa **[bergamot]**

Also popularly known as beebalm and horsemint, there are two major varieties, *M.fistulosa/menthafolia* [wild bergamot] and *M.clinopodia/fistulosa* [white bergamot] (Larson and Johnson 1999:246). Bergamot is widespread and common in the grasslands surrounding the Black Hills, where it is typically located on prairie hillsides, steam banks and roadsides (Kindscher 1992:156; Larson and Johnson 1999b:198) Most of the tribal nations in the Plains recognized differences in the two varieties by the names they applied to the plant, and as Kelly Kindscher (1987:151) writes, this indicates "their knowledge, observation, and use of this plant."

Names:

Cheyenne (Grinnell 1972 :2:186; Hart 1981:28)
wi'us kimohk'shin [bitter perfume]
mo in' a mohk'shin [horse perfume]
alternate: *v e?ohke-moxeshene*

Kiowa (Vestal and Schultes 1939:49)
po-et-on-sai-on [perfume plant]

Lakota (Gilmore 1919:111; Buechel 1970:172, 521; Rogers 1980:50)
wahpe wastemna (sweet smelling leaf)
M. menthalfoliq
hehaka tawote (elk food)
M. fistulosa
alternate: *heha'ka tapejuta* (elk medicine)
maka ceyaka iyececa [like earth mint]
M. pectinata [pony beebalm]

Plains Apache (Jordan 1965:143)
'ita.coh [big leaf]

Ponca (Gilmore 1919:111)
pexhe pa [bitter herb)
izna-kithe-ige [no translation]

Habitat: This is a very common plant throughout the Black Hills, where it is located in meadows and open forests and along roadsides at all elevations (Larson and Johnson 1999:246). The Lakotas distinguish between the one that grows on the open grasslands, *M. menthalfolia,* and the one located in the forests, *M. fistulosa* (Buechel 1970: 172). Surprisingly, neither varieties of wild bergamot are reported at Wind Cave National Park.

Uses: This had many important medicinal, hygienic, and ceremonial uses for the tribal nations who occupied the Black Hills in historic times.

[medicinal] The Lakotas had many different medicinal applications for this plant. In one, a tea was brewed from the blossoms of *M. fistulosa* to soothe sore throats and to treat colds and fevers, and in another the roots were used to doctor whooping cough. The boiled leaves were also wrapped in cloth and placed on sore eyes to provide overnight relief, and the chewed leaves were applied to wounds to stop blood flow (Buechel 1970:172). In yet another application, the leaves and flowers were mixed together in a treatment for abdominal pain, and in still another, the leaves were used to prevent fainting (Gilmore 1913b:363; Densmore 1918:270). The Kiowas used bergamot to treat insect bites and stings (Vestal and Schultes 1939:49), while the Crows made a tea from it for respiratory ailments (Hart 1992:70). Early European American settlers found this plant useful for medicinal purposes and applied it in a wide variety of remedies (Hart 1992:70; Kindscher 1992: 158; Tilford 1997:18).

[cosmetic & hygienic] The Poncas used one variety as a fragrance in hair pomade (Gilmore 1919:111). Cheyenne and Lakota men used it to perfume their bodies, clothing, and robes (Gilmore 1913b:363; Grinnell 1972:2:186). The Hidatsas used *M. fistulosa* as a perfume (Nickel 1974:67). The Plains Apaches held top quality varieties of this

plant in high esteem and considered its perfumed leaves one of their most treasured possessions. The leaves were prepared as an infusion and sprinkled on blankets, garments, ritual paraphernalia, and on the body. They recognized wide variations in the aromatic qualities of the plants and distinguished these by names, identifying those without a strong fragrance as "look alikes" or not the "real perfume." Individuals who had the ability to "sniff out" the true plants, which were rare, were held in high regard, and when stands of highly fragrant plants were found, their locations were kept secret (Jordan 1965:143-147).

[veterinary] Young Cheyenne men perfumed their favorite horses with the plant (Grinnell 1972:2:186).

[symbolic & ceremonial] Lakota singers and dancers chewed the leaves of *M. menthafolia* (Buechel 1970:521), especially during the Sun Dance (Gilmore 1919:111). Lakotas also smudged the dance area with it (Dorsey, J. 1894:454). The stems and flowers were once used by the Cheyennes to make pillows for young girls from puberty to marriage to insure their health and fertility (Grinnell 1972:2:186). The Plains Apaches believed the plant had properties that could attract and arouse the opposite sex (Jordan 1965:148-149). The association of this plant with elk, known for their seductive powers, suggests a similar use of the plant among the Lakotas (Densmore 1918:178).

Nepeta cataria **[catnip]**

Introduced to North America from Europe, this is a popular plant in European American folk remedies where the leaves are typically used in herbal treatments to aid digestion and to reduce gas and stomach bloating (Tilford 1997:28). It is common all over the Black Hills, including Wind Cave National Park, from low to mid elevations in a wide variety of disturbed environments (Larson and Johnson 1999:246-247; Pisarowicz 2001k:2). There are no reports on its identification and use in ethnobotanical sources on the area's American Indian populations.

Prunella vulgaris **[selfheal]**

Selfheal occurs occasionally at all elevations in the Black Hills in moist or wet habitats (Larson and Johnson 1999:248), and it is reported at Wind Cave National Park (Pisarowicz 2001j:2). In European American folk medicine, it is a popular remedy for a variety of maladies (Tilford 1997:70). Yet, its healing applications have not been reported in ethnobotanical sources on the tribal nations who lived in the region.

Salvia reflexa **[lanceleaf sage]**

Two varieties of salvia are located in the Black Hills: *S. pratensis* [meadow sage] and *S. reflexa* [lanceleaf sage]. Meadow sage was introduced from Europe, and it is now locally abundant in the northwestern Black Hills, while lanceleaf sage, a native, is occasional in a variety of environments throughout the Hills from low to mid elevations (Larson and Johnson 1999:248-250). The Lakotas call lance-leaved sage *maka ceyaka* [earth mint], a name also used in reference to the pennyroyal that is not located in the Black Hills. *Hedeoma drummodi* [false penny royal], also absent in the Black Hills, is known as *ih'e maka ceyaka* [rock earth mint] (Gilmore 1919:112; Buechel 1970: 329, 702; Rogers 1980:50). The Lakotas flavored their soups with false pennyroyal (Buechel 1970:329), and they used it as a tonic in diets for the sick (Gilmore 1919: 112). Melvin Gilmore (Ibid.) also writes that *maka ceyaka* was used as an infusion to cure colds. Whether any of these applications were used for lance-leaved sage is unclear.

***Scutellaria* spp.**
[skullcaps]

S. galericulata [marsh skullcap] located at Wind Cave National Park, and *S. lateriflora* [mad dog or blue skullcap] are the two skullcap species reported in the Black Hills. Both of these occur occasionally near streams, lakes, ponds, and springs from low to mid elevations throughout the region (Larson and Johnson 1999:250-252; Pisarowicz 2001j:2). They are found throughout the United States, and their native names and uses have been described for various tribal nations (Kindscher 1992: 279-281) and also in European American herbal remedies (Tilford 1997:136). No information on these plants was uncovered, however, for the tribes who lived in the Black Hills region.

Stachys palustris
[marsh hedgenettle]

Also called woundwort, this plant is located occasionally in riparian environments at low to mid elevations over the entire region of the Black Hills, including Wind Cave National Park (Larson and Johnson 1999: 252; Pisarowicz 2001j:2). Early settlers used it medicinally, and it is now included in modern herbal remedies to treat sore throats, headaches, and joint inflammations (Tilford 1997:72-73). Again, there is no information on its use for the American Indian populations who lived in the region.

Liliaceae
The Lily Family

The bulbs of many plants in the lily family were used for food and medicinal purposes by tribal nations who lived and traveled in the environs of the Black Hills.

***Allium* spp.**
[wild onion]

Wild onions contain important micronutrients, including vitamin C and A (Kindscher 1992:222-23), and as Kelly Kindscher (1987:16) writes, they would have been a "nutritious complement" to the buffalo-meat diet of the tribal nations who lived in the central and northern Plains. Several different species of wild onions can be found in the Black Hills and surrounding areas, including *A.cernuum* [nodding onion], *A. textile* [textile Onion], and *A.stellatum* [autumn or pink onion], and *A.geyersi* [Geyer's onion] (Johnson and Larson 1999:200; Larson and Johnson 1999:254; Pisarowicz 2001h:2).

Names:

Cheyenne (Grinnell 1972 :2:171; Hart 1981:12)
kha-ohk-tsi-me-is'-tse-hi [smells like skunk]
alternates: *xaoe-hehestavo* [skunk nuts]
pat se' wots [no translation given]
tohtoo?e-xaoe-nestavo [prairie skunk]

Comanche (Carlson and Jones 1939:520)
pakoik [large onion]
t?diekiok [small onion]

Lakota (Buechel 1970:447; Rogers 1980:27)
psin [onion]
psin sica'mna [bad smelling onion]
specifically *A. drummondi*

Plains Apache (Jordan 1965:27)
libicilcinah [horses don't eat them]

Ponca (Gilmore 1919:71)
manzhonka-mantanaha [no translation given]

Habitat: Onions, particularly the *cernuum* variety, are frequent in the Black Hills at low to high elevations in a variety of habitats including open pine forests and mixed grass prairie (Larson and Johnson 1999: 254), and they also appear at Wind Cave National Park (Pisarowicz 2001h:2).

Uses: American Indian and European American populations throughout the area collected wild onions for food and medicine.

[food] Wild onions were a popular food, eaten alone or as a condiment for meats and soups among all tribes in the region (Kindscher 1987:12-17). The Lakotas and their neighbors ate them raw as a relish, and they fried or cooked them to enhance the flavor of other foods (Gilmore 1919:71; Buechel 1970:447; Standing Bear 1978:58). Royal Hassrick (1964:179) quoted a Lakota woman who said: "wild onions were larger and sweeter than turnips. It was time to pick them when the prairie grass was thickest. Mixed with meat, either fresh or jerked, onions were extremely good." The Cheyennes, Arapahos, and Plains Apaches flavored meat with wild onions, especially in the absence of salt (Jordan 1965:27; Nickerson 1966:46-47; Grinnell 1972:2:171; Hart 1981:12). The Comanches typically roasted them (Carlson & Johnson 1939:520).

[medicine] Poultices were made by the Cheyennes from the pulverized roots and stems of onions to heal carbuncles (Grinnell 1972:2:171-72), and the Dakotas were reported to use bruised onions to treat bee stings (Kindscher 1992:29). The Hidatsas relied on onions as medicine to heal bone disorders (Nickel 1974:58). In European American folk medicine, onions were employed to treat a variety of respiratory ailments including colds and pneumonia, and they were used as laxatives, expectorants, diuretics, and stimulants (Kindscher 1992:30; Tilford 1997:160).

Calochortus gunnisonni **[Gunnison's mariposa lily]**

Gunnison's mariposa lily and the closely related Sego lily, *C.nuttallii* were sources of food for tribal nations in the northern Plains and adjoining regions of the Inter-mountain West.

Names:

Cheyenne (Grinnell 1972:2:172; Hart 1981:12)
ehka' i ni' kan [no translation given]
alternate: *exaa-no?kane*

Lakota (Buechel 1970:447; Rogers 1980:27)
psin tan'ka [big onion]
applies to *C. gunnisonni* and *C. nuttali*

Habitat: The mariposa lily is commonly found in mixed grass prairies, open forests, and upland meadows from low to mid elevations in the Black Hills (Larson and Johnson 1999:256). The sego lily is the only one reported at Wind Cave National Park (Pisarowicz 2001i:2).

Uses: Both varieties of lily were a common source of food and medicine for the tribal nations of the region.

[food] Among the Cheyennes, the bulbs of the mariposa lily were dried, pounded, and stored for winter use to make a sweet mush, and the flower buds were eaten as well (Grinnell 1972:2:172; Hart 1981:12)

[medicinal] The Cheyennes included the dried and cut up bulbs in a mixture for unspecified medicinal uses (Hart 1981:12).

[veterinary] Cheyennes placed the roots in their horses' mouths before they raced (Hart 1981:12).

Disporum trachycarpum **[roughfruit fairybells]**

Fairybells are abundant in the moist forest environments of the central and northern Black Hills from low to mid elevations. The berries and young shoots are edible (Larson and Johnson 1999:256). There is no evidence, however, of this or any other use for the American Indian and European American populations who lived in the region.

Fritillaria atopurpurea **[leopard lily or spotted fritillary]**

This plant is found infrequently at mid elevations in the northern and western regions of the Black Hills. Larson and Johnson (1999:258) claim that the bulbs of this plant are tasty either in a raw or cooked

form, but because they are so small they are not often harvested for food. The Lakotas called the leopard lily *canhlogan makatola* [little blue earth stalk] or *pejuta whinheya ipiye* [gopher medicine], and they used certain parts of the plant as an ointment for scrofulous swellings (Buechel 1970:117; Rogers 1980:27; Lame Deer in Fire and Erdoes 1972:170).

Leuocorinum montanum **[star lily]**

Also called sand or mountain lily, this plant appears in mixed grass habitats, but it is more commonly found in association with sagebrush (Johnshon and Larson 1999:202). It is very common at all elevations and in many different habitats throughout the Black Hills (Larson and Johnson 1999:258). The Lakotas called *L.montanum* [mountain lily], found at Wind Cave National Park, *yapi zapi iyececa* [like the spikenard], a name also given to the false dandelion (Buechel 1970: 626; Rogers 1980:27; Pisarowicz 2001i:2). The Crows are reported to have consumed the roots of this lily (Johnshon and Larson 1999:202).

Lilium philadephicum **[wood lily]**

This plant, which is very common in the eastern United States, does not appear frequently in the central Plains and western parts of South Dakota and Nebraska (Larson and Johnson 1999b:202), although it does grow at Wind Cave National Park in ravine environments. The Black Hills is an important outlier area for its growth. While this plant is rarely found in the grasslands and sagebrush steppes surrounding the Black Hills, it frequently appears at low to high elevations in the central and northern Hills in woodland habitats and riparian meadows (Larson and Johnson 1999:260). The Lakotas know it as *mnacha' hca* [very fragrant flower] (Buechel 1970:337; Rogers 1980:27), and they pulverized or chewed the flowers of the plant and applied them as an antidote for the bites of certain small poisonous brown spiders (Gilmore 1919:71).

Maianthemum canadense **[Canada mayflower]**

Also known as Canada mayflower, it is found in the understory of spruce, aspen, birch, pine, and mixed forests at mid to high elevations in the central and northern Black Hills (Larson and Johnson 1999:260). In Lakota, it is called *yapi'zapi iyececa* [like a mouth organ], which probably refers to the fact that the leaves can be used to produce musical tones (Buechel 1970:626). The same name is given by the Lakotas to several other plants, including the false dandelion and False Solomon's seal.

Nuphar polysepala **[spatterdock]***

This plant is located in regions west of the Black Hills. Its roots were a source of food for the Cheyennes who called it *heh pan'?* [green spongy] (Grinnell 1972:2:173; Hart 1981:31).

Polygonatum biflorum **[Solomon's seal]**

This plant does not commonly appear in the Black Hills, and when it does, it is found at low to mid elevations in the central regions of the Hills in moist and shaded habitats (Larson and Johnson 1999:262). No reports of its use by tribal nations associated with the Black Hills were found, but the Lakotas called it *zuzeca tawote hu tankinyan heca* [large plant with a stem like snake food] (Buechel 1970:659-660; Rogers 1980:27).

Smilacina **ssp. [False Solomon's seal]**

Two *smilacina* species, *S.racemosa* [False Solomon's seal] and *S.stellata* [starry false Solomon's seal, starry false lily of the valley, or spikenard] are found in the Black

Hills. *S.racemosa* is uncommon and restricted to moist forest and woodland habitats at mid to high elevations in the northern Black Hills (Larson and Johnson 1999:262), whereas *S. stellata* is common at all elevations in open forest and woodland locations over the entire region (Larson and Johnson 1999:264). The latter species is located in the region of Wind Cave (Pisarowicz 2001j: 2). The Lakotas called both varieties *yapi'-zapi hu* [mouth organ plant] or *zuzeca tawote hu iyececa* [like snake food stem], and they used the leaves of both to produce musical tones (Buechel 1970:626, 660; Rogers 1980:27). While *Smilacina* species were used as food and medicine by tribal nations farther to the east and the west, there are no reports of such use among the tribes who lived near the Black Hills (Kindscher 1992:282-283; Tilford 1997:58). This is a popular European American herbal remedy employed as a laxative, anti-inflammatory, and cough suppressant (Tilford 1997:58).

Smilax herbacea **[carrion flower]**

Also known as Jacob's Ladder, this plant is not reported in the Black Hills but is more typically found in the eastern prairies of South Dakota and Nebraska. The Lakotas called it *caniyawi cik'ala* [little wood calls a man/ little wood mouth speaks] or *zuzeca tawote ptapta ikoyaka* [like snake food with clusters attached]. The Poncas ate the fruit of the *S. herbacea* to treat hoarseness (Gilmore 1919:71).

Zigadenus **spp. [deathcamus]**

Two varieties of the deathcamus, *Z.elegans* [mountain or showy deathcamus] and *Z. venenosus* [meadow deathcamus] are commonly found in the Black Hills and in the surrounding grasslands as well. The latter is also located at Wind Cave National Park (Pisarowicz 2001i:2). While *Z.elegans* occurs at mid to high elevations in open forest and woodland environments, *Z. venonsus* exists at lower elevations in open pine forests, sagebrush steppes, and mixed grass prairies. Both are highly toxic to humans (Larson and Johnson 1999:264, 266, Johson and Larson 1999:204). The Lakotas knew the meadow deathcamus to be poisonous and called it *psin hubloka* [male onion stem] (Buechel 1970:447; Rogers 1980:28). It was featured in the cycle of stories associated with the Four Winds (Walker 1983:353-355).

Linaceae **The Flax Family**

Two species of flax, *Linum Lewissi* [prairie flax], named after Meriwether Lewis, and *L. rigidum* [stiffstem flax] are reported in the Black Hills (Larson and Johnson 1999:266-68) and the surrounding grasslands (Kindscher 1987:244). Another variety *L. perenne* [blue flax] grows at Wind Cave National Park (Pisarowicz 2001k:2).

Names:

Lakota (Buechel 1970:96, 117; Rogers 1980:50)
ata'sosapina nabla'ga [they spit on it and it spreads out]
L. rigidum
alternate: *canhlogan nablaga* [stalk that swells and bursts]

Habitat: In the Black Hills, both species occur at low to mid elevations in mixed grass prairies and open forest habitats. But while *L. Lewissi* is frequent in its occurrence, *L. rigidum* is common but not abundant (Larson and Johnson 1999:266-68).

Uses: Although the tribal nations who lived in the area of the Black Hills used *Linum* as a food condiment, they do not appear to have applied it medicinally.

[food] Tribes in the region used the seeds of both varieties to flavor food (Gilmore 1919:96; Kindscher 1987:244).

[medicinal] The tops were made into infusions for eyewashes by tribal nations located in the Intermountain West, and the cultivated varieties of flax were used by European Americans in decoctions to treat digestive, lung, and urinary complaints (Kindscher 1992:258-59).

[arts & manufacture] Many tribal nations, especially those west of the Black Hills, used the *L. Lewissi* variety to make cordage (Larson and Johnson 1999:266).

Loasaceae
The Stickleaf Family

There are three *Mentzelia* species in the Black Hills, *M.decapetala* [tenpetal blazingstar], *M.nuda* [sandlily or bractless blazingstar], and *M.oligosperma* [stickleaf or chickenthief], but only the sandlily is reported to have had any use for tribal nations in the region (Larson and Johnson 1999:268-69).

Names:

Cheyenne (Hart 1981:30)
wo'?ome-hese'eo?otse [white medicine]
M. nuda

Lakota (Gilmore 1919:103; Buechel 1970:117, 190; Rogers 1980:50)
hu' pe'pe [Prickly stem]
M. nuda
alternate: *to' kahu hu'pe'pe* [Prickly stem thistle]
M. nuda
canhlogan mah'awanglakela [Locust stalk]
M. decapetala

Plains Apache (Jordan 1965:72)
'ita'edil^ise [leaves stick to you]
M. stricta

Habitat: *M.decapetala* is found occasionally on the dry clay, rocky, or shale hillsides of the Hogback, Red Valley, and Gray Shale Foothills, whereas *M.nuda* is less frequent in the region and located on barren sandy and gravelly soils in the southern Black Hills at low elevations. *M.oligosperma* is the rarest of the three and confined largely to dry rocky ledges and slopes in the low elevation regions of the southern Hills (Larson and Johnson 1999: 268-269).

Uses: The tribal populations of the Black Hills used the *Mentzelia* primarily for medicinal purposes.

[food] None of the *Mentzelia* varieties found in the Plains are used as a food by local tribal nations, although Kelly Kindscher (1987:245) writes that the Hopi of the Southwest ate the seeds from the *M.albicaulis* variety.

[medicinal] Melvin Gilmore (1919:103) reports that Dakotas stripped the leaves off the stems of *M.nuda* [sandlily] and pounded them into a gummy yellow juice that was applied externally to treat fever. The Cheyennes considered the sandlily to be one of their oldest medicines and held it in high regard; the plant was never used alone but in combination with other medicines to treat fevers, earaches, and arthritis (Hart 1981: 30).

Malvaceae
The Mallow Family

Larson and Johnson (1999) report only one species from this family, the Scarlet (false red) globemallow, in the Black Hills. Other species, widely distributed in the immediate environs of the Hills, are recognized by local tribal nations and need to be considered as well (Kindscher 1987:68-71, 1992:229-30).

Callirhoe involucrata
[purple poppymallow]

The Black Hills stand literally at the center of this plant's restricted distribution in North America, so it is surprising that it is not covered in Larson and Johnson's book (1999) on the plants of the Black Hills and Bear Lodge Mountains (Kindscher 1987: 69). The Lakotas knew it as *pezhuta nantiazilia* [smoke treatment medicine], and, as the

name implies, they used the dried leaves in a smoke treatment for colds (Gilmore 1919: 103). The purple poppymallow's sweet starchy root was also reported as a food used by tribes along the Oregon Trail in many 19th century sources, but surprisingly, little has been written about its culinary uses in more contemporary ethnographic sources (Kindscher 1987:69-70).

Hibiscus trionum **[flower-of-an-hour]**

This plant was originally introduced from Africa but is now reported to be a nuisance in much of the southern parts of the West where it is primarily located. The Lakotas call the flower-of-an-hour *utahu canhlogan* [oak stalk] but have no reported use for it (Buechel 1970:508; Rogers 1980:51).

Sphaeralcea coccinea **[scarlet globemallow]**

Culturally, this was a very important plant for at least two tribal nations in the region, the Lakotas and the Cheyennes, both of whom used it for medicinal and ceremonial purposes.

Names:

Cheyenne (Grinnell 1972:2:180; Hart 1981:30; Schwartz 1988:53)
wi ke isse' e yo' [Sweet medicine]
alternates: *hestomoa?akan?ano* [no translation given]
eomoseeoz [grease weed]

Comanche (Carlson and Jones 1939:523)
yekanatsu [no translation given]

Lakota (Buechel 1970:174; Rogers 1980:51; Lewis, T. 1990:149)
heyo'ka tapeju'ta [Heyoka's medicine]
alternate: *utahu canhlogan*[oak stalk]

Habitat: This plant is common over the entire Black Hills at low to mid elevations in mixed grass prairie, open pine woodland, and sagebrush steppe habitats (Larson and Johnson 1999:270), and it is also widely located on the neighboring grasslands (Johnson and Larson 1999:206). It is listed among the plants at Wind Cave National Park (Pisarowicz 2001h:2).

Uses: Although the scarlet globemallow is also documented for tribes in the Southwest, most of the ethnobotanical reports on it come from the Plains region (Kindscher 1992:207-209).

[medicinal] The Lakotas prepared a salve from the roots of the scarlet globemallow to treat skin sores and burns (Gilmore 1919:55; Buechel 1970:174), while the Comanches made a tea from it to reduce swelling (Carlson and Jones 1939:523). The Cheyennes pounded the entire plant and steeped it in boiling water with other herbs to make them more palatable (Grinnell 1972:2:180), and the Arikaras combined the herb with a gum from the chokecherry tree to relieve post-partum hemorrhage (Gilmore 1930:74). In European American folk medicine, it is used as an emollient to soothe skin irritations and in treatments for respiratory ailments (Tilford 197:94).

[symbolic & ceremonial] In their ceremonies, the Lakota *Heyoka* [Contraries] rubbed the mucilaginous substance over their arms and hands to prevent them from burning when they plunged them into boiling water to take up pieces of hot meat (Densmore 1918:167-168; Gilmore 1919:55; Buechel 1970:174; Lewis, T. 1990:149). Susie Hollowhorn related a story to Helen Beckwith (1930:415-416) about the relation between *Heyoka* and the scarlet globemallow. Members of the Cheyenne Contrary Society had a similar use for this plant in their ceremonies (Hart 1981:31; Whiteman in Schwartz 1988:53).

Monotropacea
The Indian Pipe Family

Only one species from this family**,** *Pterospora andromedea* [pinedrops], is reported in the Black Hills, and only one of the region's tribal nations, the Cheyennes, are known to have named and used them. The plant appears occasionally over the entire Black Hills at mid to high elevations in varied forest habitats (Larson and Johnson 1999: 270). The Cheyennes call pinedrops *matu' minis' tois se' e yo* [nose bleed medicine] or *matomene-heseeo?otse* (Grinnell 1972:2: 183; Hart 1981:25) and employe them to prevent bleeding from the nose and lungs. The stem and berries were ground and combined in an infusion that was snuffed up the nose or drunk for treatments of the lungs (Grinnell 1972:2:183).

Nyctaginaceae
The Four O' Clock Family

Also known as narrowleaf umbrellawort, *Mirabilis linearis* [narrowleaf four o'clock] and the related *M. nyctaginea* [heartleaf four o' clock] and *M. hirsuta* [hairy four o'clock/ umbrellawort] are found in a wide variety of prairie, plains, and pasture habitats in the northern and central Plains region (Kindscher 1992:263-264). *M. linearis* is the most common four o'clock in the Black Hills. Although much less frequent, the other two varieties are located in the Hills as well (Larson and Johnson 1999:272).

Names:

Lakota (Buechel 1970:117, 189, 445; Rogers 1980: 51, 52)
huokiha hanskaska [tall jointed stem]
cahlogan okiheton [jointed stem]
M. hirsuta
poipie [medicine for swellings]
M. nyctaginea
Ponca (Gilmore 1919:78)
makan-wasek (strong medicine)

Habitat: *M.linearis* and its less common relatives are found in the southern regions of the Black Hills in low elevation mixed grass prairie, open pine woodlands, and sagebrush steppe (Larson & Johnson 1999:272).

Uses: *Mirabilis* species were used entirely for medicinal purposes.

[medicinal] The Lakotas made a tea from the roots of *M.linearis* to treat urinary problems (Buechel 1970:117; Lame Deer in Fire and Erdoes 1972:170). The root of a related variety *M.nyctaginea* was one of the ingredients the Lakotas used for making a tea to reduce fever, and it was also combined in a mixture boiled with *Echinacea angustifolia* to get rid of intestinal worms. The Lakotas treated limb swellings and broken bones with the grated and moistened roots, while the Poncas masticated the roots to heal wounds (Densmore 1918:270; Gilmore 1913b:361, 1919:78).

Onagraceae
Evening Primrose Family

Nine different species from the evening primrose family are reported in the Black Hills, and, of these, at least four are described in ethnobotanical sources for the tribes who lived in the region.

Calylophus serrulatus
[yellow evening primrose or yellow sundrops]

The yellow evening primrose is widespread in the Great Plains, and it is a common plant over the entire Black Hills where it grows in mixed grass prairie and open pine forest as well as limestone outcrops and rocky slopes at all elevations (Larson and Johnson 1999:272-274). It is located at Wind Cave National Park (Pisarowicz 2001h:1). The Lakotas called it *wahca'zi cik'ala* [little yellow flower], but they apparently had no specific use for the plant (Buechel 1970:519; Rogers 1980:53). It is not documented

among other American Indian populations in the region or European Americans.

Epilobium angustifolium **[fireweed]**

Fireweeds are found in the northern and central Black Hills in moist, mid to high elevation forests, thickets, and clearings (Larson and Johnson 1999:274). The Cheyennes are the only tribe in the immediate region reported to have named and used the plant. They knew it as *ma?e-heseeo?otse* [red medicine] and made a medicinal tea out of the dried and pulverized leaves as a remedy for rectal hemorrhaging (Grinnell 1972: 2:181; Hart 1981:31). European American herbalists and tribes outside the area used it for medicinal purposes too (Tilford 1997: 62).

Gaura coccine **[scarlet guara or beeblossom]**

This plant, which is native to the western regions of the United States, is typically found in open dry areas of the prairies and plains (Kindscher 1992:247-48).

Names:

Lakota (Buechel 1970:399, 483; Rogers 1980:52)
tata'wabluska tacanhlogan [horsefly's weed]
alternate: *sunkoyuspapi* [they use it to catch horses]

Plains Apache (Jordan 1965:65)
ka zaye [little arrow]

Habitat: This plant is common and widespread in the Black Hills, located largely in mixed grass prairie and open forest regions at low to mid elevations (Larson and Johnson 1999:276). This plant is not reported at Wind Cave National Park, but the *G.mollis parvilfora* [velvetweed] is located here (Pisarowicz 2001h:1).

Uses: Only the Lakotas and Plains Apaches are reported to have had uses for this plant.
[medicinal] Although medicinal uses are reported for tribal nations outside the Plains and among European American herbalists (Kind-scher 1992:247-248), there is no documentation for tribes in the Black Hills area.

[veterinary] The Lakotas chewed and rubbed it on their hands as a salve to attract horses (Buechel 1970:399). Standing Bear (1978:60) described another use for this plant as follows: "On the plain also grew a small-leafed, low growing plant which was valuable in treating horses when they became afflicted with distemper."

[art & manufacture] The Plains Apaches once made toy arrows for their children from this plant (Jordan 1965:65).

Oenothera **spp. [evening primrose]**

Several different *Oenothera* species are found in the Black Hills, including *O. biennis* [common evening-primrose], *O. caespitosa* [gumbo or shortfruit evening-primrose], and *O. coronopitfolia* [cornleaf evening-primrose]*.

Names:

Lakota (Buechel 1970:116, 190; Rogers 1980:52,53)
canhlogan hu'nla [rattle weed]
O. biennis
canhlogan hu sansan [whitish stemmed weed]
O. pallida

Habitat: All *Oenothera* appear occasionally in the Black Hills at low to mid elevations. *O.biennus* inhabits sandy or gravelly stream banks and bars and other moist, disturbed habitats throughout the Black Hills, whereas *O.caespitosa* is largely restricted to the Hogback and Red Valley and *O. coronopifolia* is located mostly in the open forest and grassland areas of the southern areas of the Black Hills (Larson and Johnson 1999:278-80). Another, *O. albicaulis* [white evening-primrose], is recorded at Wind Cave National Park (Pisarowicz 2001h:1, 2001i:1).

Uses: Primroses were used primarily for medicinal purposes.

[food] Although the roots are edible (Kindscher 1987:246-247), there is no evidence that the tribal nations who lived in the area ever consumed them.

[medicine] The Poncas made a poultice from *O.rhombipeta* [fourpoint evening-primrose], a species not reported in the Black Hills, and several tribes outside the immediate region also had medicinal uses for different *Oenothera* species (Kindscher 1992:162). European Americans in the West had a variety herbal remedies derived from the members of this subfamily, including diuretic, laxative, and antispasmodic applications (Moore, M. 1979:75; Tilford 1997: 56).

[cosmetic & hygienic] Reverend Eugene Buechel [1970:116] wrote that the Lakotas found the seeds of *O. biennus* aromatic.

Orchidaceae
The Orchid Family

Many different orchid species are found in the Black Hills, and with a few exceptions, most occur in the central and northern regions of the Hills (Larson and Johnson 1999:280-288). One exception is *Epipactis gigantea* (giant helleborine). This is a rare plant, restricted to the calcareous stream banks along Cascade Creek south of Hot Springs, South Dakota (Larson and Johnson 1999:288). Although *Coerallorhza maculata* [spotted coralroot] was held in high regard by some unidentified tribal nations in the West and used in teas to treat colds (Larson and Johnson 1999:282), this has not been established for any of the tribes who lived in the vicinity of the Black Hills. The only orchid species named and used by local tribes is *Cypripedium calceolus* [greater yellow lady's slipper], which is found on the northern and eastern sides of the Black Hills at low to mid elevations on moist rocky slopes (Larson and Johnson 1999:286). The Lakotas called it *maka canakpa* [earth groin swelled up] and ate its bulbous roots as an emergency food (Buechel 1970:329; Rogers 1980:28).

Orobanchaceae
The Broomrape Family

There are several different *Orobanche* species in the Black Hills, and these are found occasionally in proximity to *Artemisia* at low elevations in the mixed grass prairies, dry open forests, and sagebrush steppe habitats of the Red Valley, Hogback, and Minnelusa Foothills (Larson and Johnson 1999:290). The only species reported at Wind Cave National Park is *O. fasiculata* [clustered broomrape] (Pisarowicz 2001h:1). Although this plant was reportedly used as a food by some of the Numic speaking tribal nations in the West (Kindscher 1987:247), there is no documentation for this among the tribes who historically lived around the Black Hills.

Oxalidaceae
The Woodsorrel Family

Several species of the subfamily *Oxalis* are found in the Black Hills, including *O. priceae/dilleni* [tufted yellow or greygreen woodsorrel], *O.stricta* [common yellow woodsorrel], and *O.violacea* [violet woodsorrel] (Larson and Johnson 1999:290-292). Woodsorrel is commonly found in the moist prairies and open woodlands in the eastern regions of South Dakota and neighboring states (Kindscher 1992:159), but some varieties, like the greygreen woodsorrel, are adapted to drier environments in the west.

Names:

Kiowa (Vestal and Schultes 1939:35)
aw tawt an ya [salt weed]
O. stricta

Lakota (Buechel 1970:520; Rogers 1980:53)
wahpe skuya [sweet leaf]
O. stricta, also used for *Rumex venosus*

Ponca (Gilmore 1919:98)
hade-sathe [sour herb]
O. violacea

Habitat: The greygreen woodsorrel is frequent at all elevations in a variety of grassland and forest environments, while the related yellow woodsorrel is less common and found in moister habitats. The violet woodsorrel is found occasionally at low to mid elevations in the meadows and open forests of the central Black Hills (Larson and Johnson 1999:290-292).

Uses: Woodsorrels were edible and also used medicinally by the tribal nations of the region.

[food] The leaves of yellow woodsorrel were chewed by the Kiowas to relieve thirst on long walks (Vestal and Schultes 1939: 35). These species may have been ingested by the Lakotas who reported that their leaves tasted bitter (Buechel 1970:520).

[medicinal] The Poncas used the leaves of *O. violacea* for a poultice to treat swellings (Gilmore 1919:98).

Papayeraceae
The Poppy Family

Both species in the Poppy family, reported in the Black Hills, were named and used by tribal nations who lived in the region during historic times.

Argemone polyanthemos
[Crested pricklypoppy]

The Crested pricklypoppy grows in the central Plains region of North America from Montana in the north to Texas in the south (Kindscher 1992:228).

Names:

Comanche (Carlson and Jones 1939:520)
pitsiteya [no translation given]

Lakota (Buechel 1970:494; Rogers 1980:53)
to' kahu wahinkpe on ziyapi [thistle to dye arrows yellow]

Habitat: The Crested pricklypoppy is frequently found at low elevations primarily in the central and northern portions of the Red Valley and the Hogback (Larson and Johnson 1999:292), but it also grows at Wind Cave National Park (Pisarowicz 2001h:2).

Uses: The Comanches and Lakotas are the only tribes with reported uses for it.

[medicine] The Comanches used the sap in a treatment for sore eyes (Carlson and Jones 1939:520).

[art & manufacture] The Lakotas made a dye from it to color their arrows yellow (Buechel 1970:494).

Sanguinaria Canadensis
[Bloodroot]

Although this plant is fairly common in the eastern prairies of South Dakota and Nebraska, it is rare farther west and confined largely to locales in the Black Hills. Here it is uncommon and found in the moist understory of mixed and deciduous forests at low to mid elevations in the northeastern Black Hills (Larson and Johnson 1999:294). The Poncas called it *minigaqthe makan wau* [woman seeking medicine]. Ponca men employed the root as a love charm to attract members of the opposite sex, and sometimes used it for a facial paint (Gilmore 1919:83).

Plantaginaceae
Plantain Family

Even though several members of the Plantain family are common in the Plains, Larson and Johnson (1999) do not list any of them in the Black Hills. *Plantago patagonica* [woolly plantain or Indianwheat] is widely found in the dry upland plains of the western Dakotas and adjoining states (Lar-

son and Johnson 1999b:212). It is also located at Wind Cave National Park (Pisarowicz 2001h:2). *P.major* [common plantain] is a wetlands plant that is more common on the prairies east of the Missouri River, but it also exists at the park too (Pisarowicz 2001k:4).

Names:

Kiowa (Vestal and Schultes 1939:51)
bo-u-na [no translation given]
P. patagonica

Lakota (Buechel 1970:117, 531, 584; Rogers 1980: 53)
canhlogan wapostankagapi [stalk that spread out like a warbonnet]
P. patagonica
wihutahu iyececa [like a cattail]
P. major

Plains Apache (Jordan 1965:74)
'iza^o'libenida.kase [some kind of grass, horse racing]
P. patagonica

Ponca (Gilmore 1919:115)
sinie makan [no translation given]
P. major

Uses: Several different tribal nations are reported to have had uses for members of the Plantain family.

[medicinal] The Poncas heated the leaves of *P. major* to draw out thorns and splinters from the foot (Gilmore 1919:115). The seeds of this variety of plantain are widely used by European American herbalists for their laxative effects and as a source of dietary fiber. The leaves are also used for their anti-inflammatory properties for skin irritations and wounds (Tilford 1997:112).

[art & manufacture] The spikes of *P. patagonica* were used in a game played by Plains Apaches boys (Jordan 1965:75).

[symbolic & ceremonial] The Kiowas tied garlands of *P. patagonica* around their heads during dances as a symbol of health (Vestal and Schultes 1939:51).

Polyemoniaceae
The Phlox Family

Of the species in this family, only the ballhead gilia and the plains phlox are described in the ethnobotanical literature for tribes who lived in the Black Hills region.

Collomia linearis
[slender collomia or tiny trumpet]

Slender collomia is widely distributed in the Hills in many different environments and at all elevations, including Wind Cave National Park (Larson and Johnson 1999:294; Pisarowicz 2001h:1). No names or uses for this plant have been uncovered in the ethnobotanical literature.

Ipomopsis congesta
[ballhead gilia]

The ballhead gilia is frequently found in the grasslands and open forests of the Hogback, Red Valley, and Minnelusa Foothills at low to mid elevations over the entire range of the Black Hills (Larson and Johnson 1999:296). Another gilia, not reported in the Hills, *I. Longiflora* [flaxflowered ipomopsis] was called *yazokapi* [to suck the stem] in Lakota (Buechel 1970:632; Rogers 1980:53).

Phlox spp.
[phlox]

Only one of the phlox species, *Phlox andicola* [prairie phlox], listed in the Black Hills is documented in the ethnobotanical literature. Closely related to *P.hoodii* [Hood's or carpet phlox], which is common in the Hogback and Red Valley (and at Wind Cave National Park), prairie phlox is largely found in the sandy soils of the lower elevation foothills (Larson and Johnson 1999:296-298; Pisarowicz 2001h:2). The Lakotas called it *wahpe pepe* [prickly leaf] (Buechel 1970:520; Rogers 1980:53). *P. multifora* [flowery phlox], although not reported for the Hills, was employed by the

Cheyennes to make a mild stimulant, which was rubbed over parts of the body for numbness. It was named *esk o wan i' o* [gritty] in Cheyenne (Grinnell 1972:2:184).

Polygalaceae
The Milkwort Family

There are three members of the Milkwort family in the Black Hills, *Polygala alba* [white milkwort], *Polygala verticillata* [whorled milkwort], and *Polygala senega* [Seneca snakeroot]. Two of these were used by the tribal nations of the region. White milkwort is a common plant in mixed grass prairie, sage grasslands, and open pine forests from the Hogback to the Limestone Plateau (Larson and Johnson 1999:298); it appears at Wind Cave National Park (Pisarowicz 2001i:2). Kindscher (1992: 165) notes that this was one of the plants that Plains Indians traded. It was used by the Lakota to treat earaches (Kindscher 1992: 165). The Black Hills is an outlier location for the Seneca snakeroot, a plant typically associated with the eastern Woodlands. It is confined largely to the northern Black Hills where it occasionally appears at mid to high elevations in open pine or mixed forest environments (Larson and Johnson 1999: 300). The Dakotas (and possibly the Lakotas) used this plant as an antidote for toxic bites and stings, but most of the information on its native uses comes from tribes in the eastern Woodlands (Kindscher 1992:165-166). This might be the snakeroot that Lame Deer (in Fire and Erdoes 1972:172) said could stimulate erections. It was also a popular herbal remedy in European American folk medicine (Kindscher 1992:166-67; Larson and Johnson 1999:298).

Polygonaceae
The Buckwheat Family

***Eriogonum* spp.**
[wild buckwheat]

There are many different and often locally restricted species of wild buckwheat in the northern and central Plains, some of which had specific uses for tribal nations in the region (Kindscher 1992:243-245). Two of the species reported in the Black Hills are identified in the Lakota language, but no specific uses were designated for them. Other *erigonum* species with reported uses among the tribal nations of the region are not listed in the Hills, although *E.annum* [annual wild buckwheat] is apparently very common in surrounding rangelands (Johnson and Larson 1999:218).

Names:

Cheyenne (Grinnell 1972:2:172)
hisse e yo [no translation given]
E. umbellatum [sulpher-flower buckwheat]

Comanche (Carlson and Jones 1939:521)
ekanatsu [no translation given]
E. lancifolium [lanceleaf buckwheat]

Lakota (Buechel 1970:116-117, 227, 399, 470; Rogers 1980:54)
canhlogan hutkan sabsapa [black root medicine]
E. flavum [alpine golden buckwheat]
i'niyan pejuta [breathing medicine]
E. annum
alternative: *on wahinyuntonpi* [to rub on hides]
sunktawote [horse's food]
E. pauciflorum [fewflower buckwheat]

Habitat: *E.flavum* [wild yellow buckwheat] is common in the Black Hills at low to mid elevations on dry limestone and sandstone outcrops and in red stone soils, and *E. pauciflorum* [fewflower buckwheat] is found occasionally in the Hogback and Red Valley at low elevations (Larson and Johnson 1999: 300). Both are reported at Wind Cave and so is *E.Annum* [annual buckwheat] (Pisarowicz 2001h:1).

Uses: Wild buckwheats had a number of different uses for the tribal nations who lived in the region of the Black Hills and also for those who resided in the Southwest (Kindscher 1992:244).

[medicinal] The Cheyennes made a tea from *E.umbellatum* to shorten the length of menses, and they considered this medicine scarce and so valuable that they would give a horse for a small quantity of the prepared medicine (Grinnell 1972:2:172). The Lakotas brewed a tea from *E. annum* to treat sore mouths in children and also to promote urination (Buechel 1970:227), while *E.flavum*, judging by its Lakota name, was probably used for some unidentified medicinal remedy (Buechel 1970:116-117). The Comanches are also reported to have made a tea from *E. longifolium* to doctor stomach disorders (Carlson and Jones 1939:521).

[veterinary] The Cheyennes used *E. subalpinum** to strengthen their horses (Grinnell 1972:2:172).

[art & manufacture] Reverend Eugene Buechel (1970:227, 399) reports that hides were rubbed and bleached by the Lakotas with a solution of the blossoms of *E.annum* and brain, liver, gall, or spleen.

***Polygonum* spp. [smartweed]**

Two varieties *Polygonum amphibian*/*coccineum* [marsh smartweed] and *P.douglasii* [Douglas' knotweed], are reported in the Black Hills, but many others exist in the region (Larson and Johnson 1999:302-303). The Lakotas had names for six different *Polygonum* species.

Names:

Cheyennes (Grinnell 1972:2:173; Hart 1981:32)
aestome-mesehestotse [tasteless potato]
P. bistortoides [American bistort]

Lakota (Buechel 1970:476, 702; Rogers 1980:54)
psito'la hu iyececa [its like yucca]
P. convolvulus [black bindweed]
alternate: *ta'ku sasala* [a red thing]
P. coccineum
ta'ku sasala ececa unma' inkpa sasa un he [its full of things]
*P.pennsylvanicum**
ta'ku sasala huswula [fine red stem]
P. persicaria [Lady's thumb]
wahpe pepela [prickly leaf]
P. arenastrum [oval-leaf knotweed]
Alternate: *ta'ku sasala* refers to [curly top knotweed]

Habitat: *P. coccineum* is common over the entire region of the Black Hills along stream banks and pond margins at low to mid elevations, while *P.douglasii* is located occasionally at higher elevations in the northern and central Hills (Larson and Johnson 1999:302). Neither is reported, however, at Wind Cave National Park.

Uses: Many *Polygonum* species are edible, and the two tribes for which there is information did eat them. Only one medicinal use has been reported in the ethnobotanical literature, however.

[food] The Cheyennes considered the roots of *P. bistortoides* a delicacy and boiled them with meat (Grinnell 1972:2:176). The Lakotas reported that *P.coccineum* was edible (Buechel 1970:476).

[medicinal] The Lakota medicine man, Lame Deer (in Fire and Erdoes 1972:170), did not identify a specific variety, but he noted that smartweed was good for stomach cramping and diarrhea.

***Rumex* spp. [dock]**

Many of the various *Rumex* species have known uses among tribal nations in the Plains, including the five reported for the Black Hills: *R. acetosella* [sheep sorrel] and *R. occidentali/aquaticus* [western dock] are native species, while *R. crispus* [Indian rhubarb or curly dock], *R. stenophyllus* [toothed or narrowleaf dock], and *R. patien-*

tia [patience dock] are introduced species, commonly seen along ditches and roadsides (Larson and Johnson 1999:304). *R. venosus* [veiny dock or wild begonia], although not reported for the Hills, is very common in the mixed grass prairies of the greater plains region (Johnson and Larson 1999:220).

Names:

Arapaho (Nickerson 1966:47)
hewovey [no translation given]
R. venosus

Cheyenne (Grinnell 1972:2:172; Hart 1981:32)
ma' i tuk ohe [red steeping in water]
R. venosus
alternate: *ma?e-tohko-o?he?e*
hohaso?e [no translation given]
R. crispus

Lakota (Gilmore 1919:77; Buechel 1970:476, 520; Rogers 1980:55)
shiakipa [no translation given]
R. crispus
* This probably from the word *siya'ka* [a boil] (Buechel 1970:463).
taku sasala hu iyececa [like the red plant stem]
R. altissimus[pale dock]
wahpe skuya [sour leaf]
R. venosus

Habitat: Sheep sorrel and western dock are located occasionally at the mid to high elevations of the central and northern Black Hills, while the introduced docks occur in disturbed habitats throughout the Hills and neighboring grasslands (Larson and Johnson 1999:304). Only the non-native curly dock, *R.crispus*, is reported at Wind Cave National Park (Pisarowicz 2001j:2).

Uses: The tribal nations of the Plains had many different uses for members of the Rumex subfamily.

[food] The Poncas ate the leaves of *R. crispus* like European Americans (Gilmore 1919:77), while the Cheyennes consumed the inner portion of the plant's stem (Hart 1981:32).

[medicinal] The Lakotas made a decoction from *R. altissimus* to treat stomach cramps and diarrhea (Buechel 1970:476), from *R. crispus* to draw out a boil's suppuration (Gilmore 1919:77), from *R.venosus* to expel the afterbirth (Buechel 1970:520), and from an unspecified *rumex* species to treat fevers and headaches in children (Densmore 1918: 267). Thomas Mails (1991:164) reported that the dock was one of Fools Crow's preferred medicinal plants; he wrote:

> He used its leaves and powdered root to make a poultice or a salve to treat skin problems and to stop bleeding. It as applied to boils and burns. It also reduced arthritis, rheumatism, bruises and swellings. When made into a tea, dock reduced fevers, helped kidney problems and treated sore throats, constipation, and diarrhea.

The Cheyennes dried the root of *R. crispus*, pulverizing and boiling it into a decoction to treat lung hemorrhages; they also used it in a poultice for wounds or sores (Grinnell 1972: 2:173). The Arapahos made a wash from the stems and leaves to treat sores (Nickerson 1966:47). According to Gary Tilford (1997:134, 168-169), European American herbalists rely on sheep sorrel and other *Rumex* species for poultices in treating skin disorders, metabolic imbalances, diarrhea, fevers, and inflammations.

[art & manufacture] The Cheyennes made yellow and red dyes for quills and feathers from the roots of the veiny dock (Grinnell 1972:2:173), and the Hidatsas and Arapahos did so as well (Nickerson 1966:47; Nickel 1974:69). The Cheyennes also used the roots of *R. crispus* as a source of yellow dye for porcupine quills (Grinnell 1972: 2: 173) and so did the Lakotas, who also added the roots to berry dyes to give them a richer color (Lyford 1940:42).

Primulaceae
The Primrose Family

None of the members of the Primrose family located in the Black Hills have reported uses among the European American and American Indian populations who lived in

the region, although one species does have a Lakota name.

Dodecatheon pulchellum **[darkthroat shootingstar]**

This plant is common in the open pine and mixed forest areas of the Black Hills at low to high elevations. Although tribal uses for this plant have been documented, none of these are associated with tribal nations from the immediate region (Tilford 1997:136; Larson and Johnson 1999:306).

Lysimachia **spp. [loosestrife]**

Lcilata [fringed loosestrife] is a very common plant throughout the northern Plains, and it is frequently found on the edges of streams, ponds, and springs over the entire range of the Black Hills. *L.thyrsiflora* [tufted loosestrife], on the other hand, is restricted to the northern and central Black Hills (Larson and Johnson 1999: 306). The Lakotas are the only local tribal nation whose ascriptions for *Lysimachia* species are documented in the ethnobotanical literature (Buechel 1970: 116, 117; Rogers 1980:55). *Canhlogan huwanjila* [plant with only one stalk] is their name for *L.alatum*,* while *Canhlogan wahcazi panspanjela* [soft bunchy yellow flower stalk] refers to *L. thyrsiflora.*

Pyrolaceae **The Wintergreen Family**

Several different species from the wintergreen family are found in the Black Hills, including *Chimaphila umbellata* [prince's pine] and *Pyrola asarifolia* [pink or liver leaf shinleaf]. Many of the species are rare, existing as outliers from the eastern regions of North America where they are much more common. Wintergreens were used by American Indians to treat a variety of ailments, although none can be documented for tribes who historically used the Black Hills (Larson and Johnson 1999:308-09). They also have a long history of use in European American folk medicine (Tilford 1997:120). *Wahpe blaskaska* [flat leaf] is the Lakotas' generic name for wintergreens (Buechel 1970:520; Rogers 1980:44)

Ranunculaceae **The Buttercup Family**

Several species in this family were used by tribal nations in the region, and some, like the baneberry and pasqueflower, had significant uses and meanings.

Aconitum columbianum **[Columbian monkshood]**

This plant frequently appears in the moist forest and meadow environments of the mid to high elevation central and northern Black Hills. Although it has reported uses in European American folk medicine, nothing has been uncovered for the tribal nations who lived in the region (Larson and Johnson 1999:310).

Actaea rubra **[red baneberry]**

Even though this was a very important and sacred plant to the Arikaras, Cheyennes, and Hidatsas, there is surprisingly no mention of it in the ethnobotanical literatures on other tribal nations who lived in the area, including the Lakotas.

Names:

Arikara (Gilmore 1930:75)
shkanikatit [no translation given]

Cheyenne (Grinnell 1972:2:174; Hart 1981:33)
motsi' iun [sweet medicine]
alternate: *motse"eotse* [about raising children]

Habitat: This plant occurs frequently at all elevations in the northern and central Black Hills where it is located in moist coniferous

or mixed deciduous forest habitats (Larson and Johnson 1999:311).

Uses: The baneberry plant had very important medicinal and ceremonial uses for the Arikaras, Cheyennes, and the Hidatsas.

[medicinal] The Cheyennes dried the roots and stems for an infusion to increase the flow of a nursing woman's milk and to strengthen the blood (Hart 1992:8). The plant also served as a sweetener to make other medicinal remedies palatable (Randolph 1937:193). The plant's roots were used by the Arikaras to aid in childbirth, to treat menstrual cramping, to heal breast abscesses, and to clean the nostrils, eyes, and mouth of a newborn child (Gilmore 1930:73, 75, 76, 77).

[symbolic & ceremonial] This is one of the most sacred plants of the Cheyennes who believe that their culture hero brought "to help the people save and bring up their children" (Grinnell 1972:2:174; Randolph 1937:193). To the present day they keep its roots in their Sacred Arrow, Sacred Hat, and Sun Dance bundles. They also use the root in the 'throwing it at him' ceremony, in which a spiritual leader bites tiny fragments of the root and spits it on his hands and those of others who conduct sacred tasks. Historically, it was employed in ceremonies to 'blind' the Cheyennes' enemies (Hart 1992:8). The Hidatsas also considered the root sacred and used it in their River Ceremony (Nickel 1974:57).

Anemone **spp. [anemone]**

Five different anemone species are reported in the Black Hills, and of these, three are associated with names and/or uses in ethnobotanical sources for tribal nations in the region.

Names:

Lakota (Buechel 1970:178, 183; Rogers 1980:55)
hitun'kala tunkce [mouse feces]
A. cylindrica
hoksi' cekpa [boy child's navel]
Pulsatilla. patens
alternative name: *hoksi' wana nahca* [the boy child has come]

Ponca (Gilmore 1919:82)
te-zhinga-makan [little buffalo medicine]
A. canadensis
wathibaba-makan [playing card medicine]
A. cylindrica

Habitat: The meadow anemone, *A.canadensis*, is common in the wetter prairies of the eastern parts of South Dakota and adjoining states, but it occurs as a rare outlier plant in the Black Hills and is restricted to the mid to high elevation meadows in the central and northern Black Hills (Larson and Johnson 1999:312; Johnson and Larson 1999:220). By contrast, the candle anemone, *A.cylindrical*, is common in the Black Hills. It is found at all elevations throughout the region in open forest, woodland, and meadow habitats (Larson and Johnson 1999:312). The cutleaf anemone, *A.multifida*, and the pasqueflower, *Pulsatilla patens*, are both frequent in the northern and central areas of the Black Hills (Larson and Johnson 1999:312). While the former is restricted to locations at mid to high elevations, the latter, which is the state flower of South Dakota, is found at low to mid elevations, including locations at Wind Cave National Park (Larson and Johnson 1999: 314; Pisarowicz 2001h:1). The Tall anemone, *A.virginiana**, is also found in these areas, but it is a rare plant (Larson and Johnson 1999:312).

Uses: Members of the anemone subfamily were important medicinally and symbolically to some of the tribal nations who lived in the vicinity of the Black Hills.

[medicinal] The root of the meadow anemone was one of the most highly esteemed medicines of the Poncas and their close relatives the Omaha. It was prescribed for wounds and many other ailments, but the right to use it was confined to members of the *Te-sinde* gens (Gilmore 1919:82). The

Dakotas (and probably the Lakotas as well) crushed the leaves of the pasqueflower to use as a counter irritant for rheumatism The Arapahos, Poncas, and Omahas used it for the same ailment (Gilmore 1919:82; Nickerson 1966:47). The Cheyennes also used the pulverized root in treatments for unknown medicinal purposes (Hart 1981:34). Various species of anemones are also associated with uses in European American folk medicine (Kindscher 1992:39-40).

[symbolic & ceremonial] The Poncas used the woolly fruits of the candle anemone as charms for good luck in gambling (Gilmore 1919:82). The pasqueflower blossoms on the high plains before the snows completely melt, and as a result, they were considered a harbinger of spring, renewal, and rebirth for several of the tribes in the region. Arikaras and Pawnees hung pasqueflowers each spring on their sacred cedar tree, which symbolized the return of spring and the renewal of life (Gilmore 1987:188). The Dakotas had many stories about this flower (Gilmore 1987:205-208), and they sang songs to celebrate its appearance in the early spring (Gilmore 1919:81).

***Aquilegia* spp.**
[columbine]

Of the two columbine species noted in the Black Hills, *A.brevistyla* [blue or small-flower columbine] and *A.canadensis* [red columbine], only the latter has any reported ethnobotanical use.

Names:

Ponca (Gilmore,1919:82)
inubthon-kithe-sabe-hi [black perfume plant]

Habitat: The blue columbine is occasionally located in moist coniferous and mixed deciduous forests of the northern and central Black Hills at mid to high elevations. The wild columbine is frequently found in the Black Hills but in the eastern regions at low to mid elevations, in moist and shady deciduous woods which border local streams (Larson and Johnson 1999:316).

Uses: Of the tribes who lived in the region, only the Lakotas and Poncas are reported to have used the wild columbine.

[medicinal] The Lakotas made a tea from the wild columbine by pouring hot water over its leaves. It was used to treat diarrhea in children (Densmore 1918:267). European American herbalists have a long tradition of using columbines for treating a wide variety of maladies, but it must be used with extreme care because of its toxicity (Tilford 1997:192).

[cosmetic & hygienic] The Poncas crushed and chewed the seeds of the wild columbine to create a fragrant paste that was applied to clothing (1919:82)

[symbolic & ceremonial] The Poncas rubbed the pulverized seeds of the wild columbine in their hands to apply as a love medicine (Gilmore 1919:82-83).

Clematis tenuiloba/ Columbiana
[rock clematis]

Rock clematis is a common plant in the Minnelusa Foothills and the Limestone Plateau (Larson and Johnson 1999:318). There is no evidence on its names or uses in the ethnobotanical literature.

***Delphinium* spp.**
[larkspur]

Delphinium bicolor [little larkspur] is the species reported in the Black Hills (Larson and Johnson 1999:318), but it is not reported in association with the region's tribal nations. *D.virescens/carolinianum* [prairie larkspur], which is documented in ethnobotanical sources, is widespread, but not abundant in the prairies of South Dakota (Johnson and Larson 1999:222; Larson and Johnson 1999:318).

Names:

Kiowa (Vestal and Schultes 1939:28)
ton-a [gourd seed]
D. virescens

Lakota (Buechel 1970:536; Roger 1980:55)
wanagi 'tinpsila [spirit turnip]
D. virescens

Habitat: *Delphinium bicolor* [low larkspur] is found west of the Missouri River, and it is especially abundant in the Black Hills area (Larson and Johnson 1999:318).

Uses: The Kiowas and Arapahos are the only native population with connections to the Black Hills that have any reported use for larkspurs.

[cosmetic & hygienic] Michael Moore (1979:96), in his work on the medicinal uses of western plants, notes that delphinium seeds and flowers were an ingredient in tinctures used by European Americans to kill lice. Larson and Johnson (1999:319) also report that American Indian populations crushed the foliage and used it as an insecticide, but the tribal attributions of this usage are not noted.

[art & manufacture] The Kiowas used the seeds from this plant in their peyote rattles (Vestal and Schultes 1939:28), and the Arapahoes and Shoshones made a blue dye from the blossoms (Nickerson 1966:47).

Ranunculus, spp. [buttercup]

There are several different buttercup species in the Black Hills, but none of these have any reported ethnobotanical uses (Larson and Johnson 1999:320-322). Two species are reported at Wind Cave National Park: *R. abortivus* [little leaf or early wood buttercup] and *R. glaberrimus* [crowfoot or sagebrush buttercup] (Pisarowicz 2001h:1,2001j: 1). Only one species, which is not identified with the Hills, is named in any of the native nomenclatures we have studied, and this is *R.cardiophyllus* [heartleaf buttercup] or *canhlogan wicagnaske* [gooseberry stalk] in Lakota (Buechel 1970:118; Rogers 1980: 55).

Thalictrum dasycarpum [purple meadowrue]

This is a common plant in the moist prairie and wet meadow environments of eastern South Dakota, and it is also found in the Black Hills (Larson and Johnson 1999:322; 1999b:224).

Names:

Cheyenne (Grinnell 1972:2:174; Hart 1981:34)
mo i' name it se' e yo [elk, horse medicine]
T. sparsiflorum
alternate:*mo?ehe-no?hame-heseeoo?otse*

Lakota (Gilmore1919:80; Buechel 1970:574; Rogers 1980:56)
wazi'mninkpa [pine top]
T. polygamum/pubescens [king of the meadow] and *T. dasycarpum*

Ponca (Gilmore 1919:80)
nisude-hi [flute plant]
T. dasycarpum

Habitat: Blue or purple meadowrue is found occasionally over the entire Black Hills region at low to mid elevations in moist meadow, open forest, and woodland habitats (Larson and Johnson 1999:322-23).

Uses: Meadowrues were used by a number of different Native populations in the Plains for a variety of purposes.

[cosmetic & hygienic] The Lakotas picked the mature fruits in August and stored them with clothes and other personal articles because of their pleasant odor (Gilmore 1913b:360), and they also rubbed the seeds on their hands as a lotion (Buechel 1970:80). The Hidatsas considered the seeds a young woman's perfume (Nickel 1974:74), and the Cheyennes mixed the flowers with other plants for perfumes (Hart 1981:34). The Arapahos used the seeds and roots for

perfume too and in a powdered form for shampoo (Nickerson 1966:47).

[veterinary] The Cheyennes dried and ground the plant into a fine powder to make their horses spirited and to give them endurance (Grinnell 1972:2:141, 174). The Lakotas used the seeds to make their horses lively (Buechel 1970:80), and the Hidatsas did the same (Nickel 1974:74).

[symbolic & ceremonial] Ponca bachelors are reported to have used the meadowrue's top as a love charm (Gilmore 1919:80).

Roseceae
The Rose Family

A number of different non-woody species in the rose family are found in the Black Hills. Of these, only two are associated with ethnobotanical uses for either European American or American Indian populations in the region.

Agrimonia striata
[roadside agrimony]

Agrimony is common in the Black Hills in a variety of moist habitats at low to mid elevations, but it has no reported cultural associations (Larson and Johnson 1999: 324).

Fragaria virginiana
[Virginia strawberry]

Two species of strawberry are found in the Black Hills, the rare Woodland strawberry, *F. vesca*, and the much more common Virginia strawberry, *F. virginiana.* Both are found in similar environments (Larson and Johnson 1999:326)

Names:

Cheyenne (Hart 1981:34; Hart 1981:34)
ve'shkee'?ehe-menoste [sweet berries]

Lakota (Buechel 1970:475, 575; Roger 1980:56)
takan yecala [string like runners]
alternates: *wazi'skeca* [pine mink]
wahpe' skuya [sweet leaf]

Ponca (Gilmore 1919:146)
bashte [no translation given]

Habitat: This popular food plant is common over the entire range of the Black Hills. It grows at all elevations in moist meadows and open pine, spruce, and deciduous forests (Larson and Johnson 1999:326).

Uses: This was an important food plant for American Indian and European American populations in the region.

[food] All of the tribal nations in the northern Plains ate the wild strawberry fresh when it ripened in June, and some apparently dried them to season other foods (Gilmore 1919:146). They were also desired and sought after by early travelers and settlers in the region (Kindscher 1987:117).

[medicinal] Although the Blackfeet of the northern Plains and many tribal nations in the upper Great Lakes used wild strawberry medicinally, there are no reports of such use among the tribes who lived in the region of the Black Hills in historic times (Kindscher 1992:245-246).

Geum spp.
[avens]

Prairie smoke or old man's whiskers, *Geum triflorum*, and yellow avens, *G. aleppicum*, are two of the *geum* species that are widely distributed over the entire Black Hills region at all elevations from mixed grass prairies and sagebrush steppes to open forests and meadows (Larson and Johnson 1999:328-29). Prairie smoke and white avens [*G. canadense*] are found at Wind Cave National Park (Pisarowicz 2001h:2; 2001j: 2). Although ethnobotanical uses for *G. triflorum* have been described (Kindscher 1992:249-50), none of these have been reported for tribes who historically lived in the Black Hills region.

***Potentilla* spp.**
[cinquefoils]

There are more than ten different cinquefoil species in the Black Hills. They are commonly found at all elevations in a diverse range of habitats (Larson and Johnson 1999: 330-336). Only the woody variety (see section on Woody Plants) has any reported name and/or use among local tribes. Names and uses for the non-woody species, however, have been documented for tribal nations outside the region (Kindscher 1992: 271-272). Cinquefoils were often used in European American folk medicine to treat sore throats, gum inflammations, and a wide variety of intestinal maladies (Moore, M. 1979:132).

Rubiaceae
The Madder Family

Only *Galium* or bedstraw species are reported in the Black Hills, including *G. boreale* [northern bedstraw] and *G. aparine* [cleavers, catchweed bedstraw, or sticky-willy]. Another species, which is more common to the prairies farther east, is *G. triflorum* [Fragrant bedstraw]. Both species grow at Wind Cave National Park (Pisarowicz 2001i:2) and are associated with names and/or uses in American Indian and European American cultural contexts.

Names:

Lakota (Buechel 1971:520, 521; Rogers 1980:57)
wahpe wacanga hu winyela [sweet smelling leaf for women]
G. trifolium
wahpe wacanga hu bloka [sweet smelling leaf for men]
G. aparine
Ponca (Gilmore 1919:115)
wau-pezhe [women's herb]
G. triflium

Habitat: The northern bedstraw is the most common in the Black Hills where it is located in a great variety of moist habitats in mixed grass prairies and forests. Cleavers and fragrant bedstraws are not as common and restricted to moist forest environments [Larson and Johnson 1999:338).

Uses: For local tribes, the members of this subfamily were used predominately as a perfume.

[cosmetic & hygienic] Fragrant bedstraw was used as a perfume for women among the Poncas (Gilmore 1913b:367, 1919:115), and we can suspect, since its name carries a similar meaning, it had the same function among the Lakotas as well. The catchwood variety would have been used as a fragrance for men (Buechel 1970:520-521).

[art & manufacture] Northern bedstraw was used as a source of red dye for some tribal nations including the Arapahos and Shoshones (Nickerson 1966:50) and a stuffing for European American bed mattresses (Tilford 1997:36).

Santalaceae
The Sandalwood Family

Only one species from this family, *Comandra umbellata* [bastard toadflax], is reported in the Black Hills. It is a very common plant throughout the region where it grows in varied habitats and at all elevations (Larson and Johnson 1999:338-39). While known as a food among Numic-speaking tribal nations in the West (Kindscher 1987:95-97), the only tribal nation from the Black Hills region with a reported use for it are the Arapahos who made a blue dye from the root bark (Nickerson 1966:50).

Saxifragaceae
The Saxifrage Family

Three species from this family are reported in the Black Hills, but only one has any reported cultural associations.

Heuchera richardsons
[Richardson's alumroot]

Richardson's alumroot was an important medicinal plant for European Americans and tribal nations in the northern plains (Kindscher 1992:122-125).

Names:

Cheyenne (Grinnell 1972:2:176; Hart 1981:38)
e hyo' isse'eyo [yellow medicine]
alternate: *heove-heseeo?otse*

Lakota (Buechel 1970:118, 520; Rogers 1980:58)
wakpe t'oga [dries out the mouth leaf]
alternates: *canhlo'hsnasnala* [little rustling leaf]
canhloh t'agela hu [tough weed stem]

Habitat: Alumroot is generally found in rocky soil or rock crevices in open to dense forests and woodland meadows from low to high elevations over the entire Hills (Larson and Johnson 1999:340).

Uses: American Indians and European Americans used alumroot primarily for medicinal purposes alike.

[medicinal] Among the Lakota, the root was prepared as a tea for chronic diarrhea, and it was also administered in powder form as a treatment for wounds and skin sores (Densmore 1918:269; Buechel 1970:520). The Cheyennes used a remedy from the alumroot to treat rheumatism and another for healing skin rashes (Grinnell 1972:2:176; Hart 1981: 38). The Arapahos employed it as well but for unidentified remedies (Nickerson 1966: 48). European Americans applied the root in ways that were nearly identical to native remedies (Kindscher 1992:124).

Lithophragma parviflorum
[prairie woodland-star]

Although the prairie star is frequently found at many different elevations and in a wide variety of environments in the northern and central Black Hills, its native names and uses have not been documented in the ethnobotanical literature (Larson and Johnson 1999:340).

***Saxifraga* spp.**
[saxifrage]

Alberta saxifrage, *S. occidentalis*, is restricted to Lawrence county in the northern Black Hills, where it occurs infrequently at mid to high elevations on moist forested rocky slopes and high meadows (Larson and Johnson 1999:342). Although there is no ethnobotanical information on this plant, a related species, *S. jamesi*, was used by the Cheyennes and named *mah is se' e yo* [red medicine]. The dried plant was rubbed in the hands until finely powdered and then boiled as a tea to treat lung hemorrhage (Grinnell 1972:2:175).

Scrophulariaceae
The Figwort Family

Of the sixteen different species in the Figwort family found in the Black Hills, most of the ones reported to have any cultural use are those belonging to the Beardtongue species.

Besseya wyomingensis
[Wyoming kittentails]

This is a very common plant throughout the Black Hills, but it is not associated with any cultural uses among American Indian or European American populations in the area (Larson and Johnson 1999:342-343)

***Castilleja* spp.**
[paintbrush]

Two *Castilleja* species are located in the Black Hills, *C.sessilifora* [downy paintbrush or paintedcup] and *C.suphurea* [sulpher Indian paintbrush], but only the former is associated with any cultural uses.

Names:

Cheyenne (Hart 1981:39)
stseke?he?pomeestse [no translation given]
C. sessilifora

Lakota (Buechel 1970:521; Rogers 1980:59)
wahpe yazokapi [suck leaf]
C. sessilifora

Habitat: Downy paintbrush is especially common to the Hogback, Red Valley, Minnelusa Foothills and surrounding grasslands, while Sulpher paintbrush is restricted to the central and northern Black Hills (Larson and Johnson 1999:344). It grows at Wind Cave National Park in ravine environments (Pisarowicz 2001j:1).

Uses: Only the culinary value of the Downy paintbrush is described in the ethnobotanical literature for the tribal nations of the Black Hills.

[food] The Lakotas and Cheyennes took the plant's nector as a food in the springtime (Buechel 1970:521; Hart 1981:39).

[medicinal] Although tribal nations outside the Black Hills region used *Castilleja* species for medicinal purposes (Tilford 1997:82), there are no reports for local tribes.

[art & manufacture] The Shoshones and the Arapahos used these species to make a red-tan dye (Nickerson 1966:50).

***Linaria* spp.**

Neither of the two *Linaria* species reported in the Black Hills, *L. dalmatica* [Dalmatian toadflax] and *L. vulgaris* [butter and eggs], are associated with any tribal names or uses. The latter grows at Wind Cave National Park (Pisarowicz 2001h:2). Both plants were introduced by European Americans as ornamental species, and both were rapidly naturalized in the region [Larson and Johnson 1999:346).

***Mimulus guttatus* [monkeyflower]**

The habitats of this plant are located mainly in the central and northern Black Hills, where it is found only occasionally at the margins of springs from mid to high elevations (Larson and Johnson 1999:348). It is also found at Wind Cave National Park (Pisarowicz 2001j:1). In Lakota, the plant is called *ceski'kan iyececa* [like a button] (Buechel 1970:130; Rogers 1980:59), but no applications have been reported for it.

***Orthocarpus luteus* [yellow owl's clover]**

This is a common plant in the Black Hills where it grows in a wide variety of habitats at all elevations. Although the Blackfeet are reported to have used it to make a red dye, no applications for it have been documented for the tribal nations who lived in the Black Hills region (Larson and Johnson 1999:348).

***Penstemon* spp. [beardtongues]**

Five species of beardtongues are reported in the Black Hills, and these are *P.albidus* [white beardtongue or penstemon] *P.angustifolius* [narrowleaf/broadbeard beardtongue or penstemon], *P.glaber* [smooth/ sawsepal beardtongue or penstemon], *P. gracilis* [slender/lilac beardtongue or penstemon], and *P. grandiflorus* [shellleaf/ large beardtongue]. This is an important subfamily of plants for the Lakotas, who have names and/or uses for four of the species found in the Black Hills.

Names:

Lakota (Buechel 1970:116, 117, 167, 307, 537, 659; Rogers 1980:59)
canhlogan ha slusluta [slippery skin weed]
P. albidus
canhlogan hlahla [rattle weed]
P. augustifolias
alternates: *hanpi'natopi* [makes blue juice]
wanahca toto [blue flower]

kimimila tawanahca [butterfly's flower]
P. grandiflora
zuze'ca tapeju'ta [snake's root]
P. gracilis
alternate: *on hunka 'lowapi iyececa* [like what's used

Habitats: White penstemon is especially common to the Hogback and Red Valley at low to mid elevations in mixed grass prairies and sagebrush steppe, and the arrowleaf variety is located there occasionally as well but at low elevations (Larson and Johnson 1999:350). Smooth and slender penstemons are found throughout the Hills at all elevations and in a wide range of environments (Larson and Johnson 1999:352). The shellleaf or large beardtongue is found only occasionally at low to mid elevations largely in the Hogback, Red Valley, and Minnelusa Foothills (Larson and Johnson 1999:354). Four of these species, the white, the slender, large, and shelleaf varieties grow at Wind Cave National Park (Pisarowicz 2001h:2).

Uses: These species had very important medicinal uses for a number of tribes in the region.

[medicinal] The Lakotas used *P.grandiflorus* as a remedy for chest pain (Gilmore 1919:114), and the Kiowas made a tea from the roots to cure stomachaches (Vestal and Schultes 1939:51). The Lakotas also made a remedy for snakebites from *P.gracilis* (Buechel 1970:659). Southwestern tribes used *P.glaber* to treat bites of various kinds (Kindscher 1992:267). Beardtongues were also used medicinally in European American folk medicine (Moore 1979:125; Kindscher 1992:268).

[art & manufacture] The Lakotas prepared *P. augustifolias* to make a blue dye for moccasin painting (Buechel 1970:167).

Scrophularia lanceolata **[lanceleaf figwort]**

Lanceleaf figwort is found occasionally in the Black Hills at all elevations and in a wide variety of habitats (Larson and Johnson 1999:354). The Lakota name for it is *wahpe yatapi iyececa* [its like the leaf they chew on], but no uses for it have been reported (Buechel 1970:521; Rogers 1980:59).

Verbascum thapsus **[common mullein]**

This plant, which was introduced from Eurasia, has become a common roadside plant throughout the American west. In the Black Hills, it is common and sometimes abundant in a range of habitats from low to high elevations. It grows at Wind Cave National Park (Pisarowicz 2001k:3). Widely used in European American folk medicine as a remedy for the treatment of asthma and bronchitis, it was adapted by many tribal nations who also applied it in the treatment of respiratory ailments (Tilford 1997:102; Larson and Johnson 1999:356). No evidence of its use, however, has been found for tribes who lived historically in the vicinity of the Hills.

Veronica **spp. [speedwell]**

V. Americana [American speedwell] is common at all elevations over the entire Black Hills near springs and spring-fed streams, and *anagallis-aquatica* [water speedwell] is also common but only up to mid elevations where it grows near streams and ponds (Larson and Johnson 1999:356, 358). *V. arvensis* [corn speedwell] is found at Wind Cave National Park (Pisarowicz 2001k:4). The leaves of *americana* are edible, but the roots may be poisonous. Modern herbalists use it as an expectorant (Tilford 1997:14). There are no reports, however, on its use among the tribal nations who resided in the region.

Solanaceae
The Potato Family

Four plants, *Hyoscyamusniger* [black henbane] and three species of *Physalis*, are reported in the Black Hills**.** Black henbane is poisonous and occasionally found in the Hills and at Wind Cave National Park, but there are no cultural uses associated with it (Larson and Johnson 1999:358; Pisarowicz 2001k:2). Another member of the potato family, *Solanum rostratum* [buffalo bur nightshade], is not mentioned in Larson and Johnson's plant inventory on the Black Hills, but it is common in disturbed areas throughout the Great Plains (Johnson and Larson 1999:234). It is also found in Wind Cave National Park (Pisarowicz 2001h:2). The Lakotas called it *spansni yutapi iyececa* [it is like what they eat uncooked] (Buechel 1970:467; Rogers 1980:60). *Solanum triflorum* [cutleaf nightshade], a close relative, was known as *canhlogan skiskita* [woodduck weed]; the Lakotas used the berries of this species for stomach aches (Buechel 1970:117).

***Physalis* spp**
[Virginia groundcherry]

Also commonly known as tomatillo, Chinese lantern, and popweed, three groundcherry species are identified in the Black Hills. These are *P. virginiana* [Virginia groundcherry], *P.heterophylla* [clammy groundcherry], and *P. longifolia/hispida* [longleaf/prairie groundcherry], but only the clammy variety has been reported on in ethnobotanical sources.

Names:

Lakota (Buechel 1970:477; Rogers 1980:60)
tamniohpi hu [womb, fetal membrane, and nest stem]
P. heterophylla

Ponca (Gilmore 1919:113)
pe igatush [forehead, to pop]
P. hetrophylla
maka bashahon shon [crooked medicine]
P. lanceolata

Habitat: *P. virginiana* is distributed across a wide variety of habitats in the Black Hills, while *P. heterophylla* favors the sandy and rocky soils of open grassland environments. *P. longifolia* is also found in the Hills but less frequently (Larson and Johnson 1999: 360).

Uses: The berries of all of these varieties are edible.

[food] Ground cherries were picked opportunistically and eaten fresh by Lakota children (Buechel 1970:477), but they were also made into a sauce and dried for the winter when quantities were sufficient (Gilmore 1913b:362, 1919:113; Red Cloud High School 2001). The Hidatsas and Kiowas also valued them as food (Nickel 1974:69).

[medicine] The Lakotas believed that the consumption of ground cherries increased peoples' appetite (Buechel 1970:470). They also used them in a treatment for snakebites (Red Cloud High School 2001). The Poncas brewed a tea from the root for headaches and stomach ailments, and they also used the root to heal wounds (Gilmore 1919:113). The roots of this plant were associated with the healing traditions of the Buffalo Medicine Society among the related Omahas (Fletcher & La Flesche 1972:2:487, 488, 584).

[symbolic & ceremonial] The Lakotas are also reported to have an unspecified use for them in their Sun Dances (Red Cloud High School 2001).

Typhaceae
The Cattail Family

Two members of this family are reported in the Black Hills: *Typha latifolia* [broadleaf cattail] and *T. angustifolia* [narrowleaf cattail] (Larson and Johnson 1999:360-361). Native names for cattails appear to be generic to the family.

Names:

Cheyenne (Grinnell 1972:2:170; Hart 1981:13)
wi'tan ots [tongue plant]
alternates: *vo?heneotse-vo?e (stse)* [fat plant]
vohpo?theneotse-vo?e
veta-no?estse

Comanche (Carlson and Jones 1939:524)
pisbumi [no translation given]

Lakota (Gilmore 1919:64; Buechel 1970:177, 584; Rogers 1980:32)
wihuta' hu [tent bottom plant]
alternate: *hantkan* [hair scraped off]

Plains Apache (Jordan 1965:50)
ka.zol [translation not given]

Ponca (Gilmore 1919:64)
wahab'igaskonthe [similar to corn]

Habitat: Cattails are found over the entire Black Hills near streams, ponds, lakes, and boggy areas at all elevations (Larson and Johnson 1999:361). They are also found in ravine environments at Wind Cave National Park (Pisarowicz 2001i:1).

Uses: Cattails had a wide range of uses among the tribal nations of the region.

[food] The Plains Apaches ate the root-stocks occasionally (Jordan 1965:50).

[medicinal] The Cheyennes made a medicine out of the dried pulverized root to relieve abdominal cramping (Grinnell 1972; 2:170). The Lakotas, Hidatsas, and Omahas used the fuzz of cattail heads to make dressings for burns and scalds (Gilmore 1919:64-65; Fletcher & La Flesche 1972:2:584; Nickel 1974:75). The Plains Apaches gave cattail pollen to cranky children to make them good-natured (Jordan 1965:135). Early European American settlers also used it as a poultice in the treatment of burns and other skin irritations (Tilford 1997:29).

[cosmetic & hygienic] The Arikaras and the Lakotas made baby "diapers" from the down (Gilmore 1919:64; Gilmore 1930; Buechel 1970:177). The Lakotas also used the down for menstrual pads (Powers, M. 1986:66).

[art & manufacture] The Lakotas also relied on the fuzz as a filling for pillows (Gilmore 1919:65; Buechel 1970:177), and the Hidatsas employed the seeds as an all-purpose padding for packing and pillows (Nickel 1974:75). The Cheyennes once used cattail leaves in their basketry (Hart 1981: 13). The Lakotas applied the roots of the common cattail in making of a yellow dye (Lyford 1940:42).

[symbolic & ceremonial] Pieces of the cattail were essential in the making of ceremonial objects for the Ponca *Wawan* ceremony (Gilmore 1919:64-65).

Utricaceae
The Nettle Family

The stinging nettle, *U. dioica/gracilis,* is the only *Utrica* species reported in the Black Hills.

Names:

Lakota (Buechel 1970:188; Rogers 1980:61)
cani ca'hpe hu [woody whip stalk]
U. dioica

Ponca (Gilmore 1919:77)
hanuga-hi [no translation given]
U. gracilis

Habitat: Stinging nettle, especially the *U. dioica* variety, is found frequently in moist areas bordering streams at all elevations over the entire region of the Black Hills (Larson and Johnson 1999:362).

Uses: The Lakotas and Poncas had medicinal or manufacturing uses for these nettles.

[medicinal] The Lakotas prepared a tea from the roots to administer for stomach pain (Buechel 1970:188). European American herbalists consider this a good nutritive tonic (Tilford 1997:210).

[art & manufacture] The dried stalks were crumpled by the Poncas to free the fiber from the woody part, and the fiber was used for twine and cordage (Gilmore 1919:77).

Valerianaceae
The Valerian Family

Two species in the Valerian family are reported for the Black Hills, *Valeriana diocia* [marsh valerian] and *V. edulis* [edible valerian or tobacco root]; both have ethnobotanical applications. Marsh valerian is occasionally found in the northern and central Black Hills where it grows in moist habitats at mid elevations (Larson and Johnson 1999:362), while edible valerian is located occasionally at mid to high elevations in the Minnelusa Foothills and the Limestone Plateau in the northwestern and western portions of the Black Hills (Larson and Johnson 1999:364). Although members of the valerian family are popular herbs in European American medicine (Tilford 1997: 150), there is no documentation on their use among the tribal nations who lived in the vicinity of the Black Hills. Both varieties are used as a popular sedative in European American folk medicine (Moore 1979:158). The cooked rootstalks of these species are edible, and they can also be dried and pulverized to make flour (Larson and Johnson 1999:362, 364). Their culinary uses, which are widely reported for the tribal nations of the Northwest, have not been documented for the tribal nations who covered the Black Hills.

Verbenaceae
The Verbena Family

Three species of the verbena family, *Glandularia bipinnatifida* [Dakota mock vervain], *Verbena hastata* [blue or swamp vervain], and *Verbena stricta* [wooly or hoary verbena] are reported in the Black Hills. The last two grow at Wind Cave National Park in various habitats. Another species in this family, *Phryma leptostachya* [lopseed], also grows at the park (Pisarowicz 2001h:3, Pisarowicz 2001i:3, 2001j:3).

Names:

Lakota (Gilmore 1919:111; Buechel 1970:500, 520; Rogers 1980:61)
canhlogan pejuta [stalk medicine]
V.hastata
to pe'stola [blue, sharp-pointed]
V.stricta
wahpe maka'ayublaya [leaves spread out on ground]
G. bipinnatifida

Ponca (Gilmore 1919:111)
pezhe maka [earth medicine]
V.hastate

Habitat: Dakota mock vervain is occasionally located in the low elevations of the southern Black Hills in mixed grass prairies and pastures (Larson and Johnson 1999:364), while blue vervain and wooly vervain are found at low to mid elevations in moist habitats in the southern Hills (Larson and Johnson 1999:366).

Uses: Although tribes outside the region are reported to have relied on verbena for various applications, the Lakotas and Poncas are the only two associated with the Black Hills with documented uses for them (Kindscher 1992:211-212).

[food] The Poncas steeped the leaves of blue vervain for a culinary beverage (Gilmore 1919:111).

[medicinal] The Lakotas prepared the leaves of the blue vervain in a tea as a remedy for stomachache [Gilmore 1913b:363, 1919: 111; Lame Deer in Fire and Erdoes 1972: 170]. This was also a popular plant in European American folk remedies (Kind-scher 1992:212).

Violaceae
The Viola Family

Although there are many different species in the violet family growing in the Black Hills and a few at Wind Cave National Park too

(Larson and Johnson 1999:368-374; Pisarowicz 2001h:3, 2001i:3, 2001j:3), none are reported to have had any special cultural uses except as markers in an Omaha (and Ponca) children's game (Gilmore 1919:103). The Lakotas called the *Viola pedatifida* [prairie violet] *wahpe to* [blue leaf] (Buechel 1970:520; Rogers 1980:61). Outside the region, European American and American Indian herbalists are reported to have used violets as an emetic to induce vomiting (Tilford 1997:152). In the Black Hills, the prairie violet appears occasionally in the central and northern regions at low to mid elevations (Larson and Johnson 1999:372). This and other violet species are potentially edible (Kindscher 1987:222).

III. VASCULAR PLANTS: GRASSES, SEDGES, RUSHES, FERNS, AND HORSETAILS

Pocaeae The Grass Family

Hundreds of different grass species grow in the plains and prairie regions of North America with over eighty varieties reported in the Black Hills alone. Many of these grasses were important to the tribal nations of the region because they provided nutritious fodder for their horses. The locations where these grasses were abundant would have been recognized as good places for local tribes to camp and pasture their horses. Knowledge of grasses and their growing seasons would also have been important in locating bison and other ungulate species who depended on them for their forage. Unfortunately, very few of the anthropologists and botanists who studied the native uses of plants in the region gathered information on tribal knowledge of forage conditions in their various areas of occupation. The ethnobotanical data on grasses are sparse relative to other plant families, and even where a fairly detailed nomenclature exists for grasses, as is the case with the Lakotas for whom over thirty different names have been recorded, much of the knowledge associated with them is not documented.

Agropyron cristatum [crested wheatgrass]

Introduced from Siberia and naturalized in the Black Hills and surrounding plains regions, the names and uses of crested wheatgrass are not documented in ethnobotanical sources (Larson and Johnson 1999:380; Johnson and Larson 1999:16). Nor are the names and uses for the other wheatgrasses reported in the area, including *A. Repens* [Quackgrass] and *A. intermedium* [Intermediate wheatgrass] (Larson and Johnson 1999: 408, 410).

Agrostis spp. [ticklegrass]

Two species of this subfamily *A. scabra* [ticklegrass/rough bentgrass] and *A. solonifera* or *gigantea* [redtop], a European introduction, are common in a variety of different habitats in the Black Hills (Larson and Johnson 1999:380). Neither of them is associated with any cultural uses in the ethnobotanical literature.

Andropogon spp. [bluestems]

A. gerardii [big bluestem] was a major species in the tallgrass prairie (Kindscher 1992: 226), and it is the only one listed in the Black Hills (Larson and Johnson 1999: 382). Other bluegrasses, however, were recognized and named in the ethnobotanical nomenclatures of Plains tribes.

Names:

Kiowa (Vestal and Schultes 1939: 13)
so-wangs-'kson [no translation given]
A. saccharoides